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AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

DECEMBER 1, 1946



Platanus Acerifolia

SEEDS

TREE—SHRUB—PERENNIAL
FLOWER—VEGETABLE

HERBST BROTHERS
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Free catalog "Seeds for Nurserymen."

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FOR **71** YEARS!

FRUIT TREE STOCKS

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Experience has proven that due to very favorable soil and climatic conditions, Western seedlings are superior in every way. We are using all Western-grown Apple Seedlings for our own grafting and for budding stocks.

PRICES—Are for shipment from Shenandoah, after January 10.

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Our Washington-grown Apple Seedlings have made a splendid growth and are of excellent quality. They will be dug when well ripened, carefully graded, and are sure to please.

	Per 100	Per 1000
1/4-inch and up, branched, heavy.....	\$3.50	\$30.00
1/4-inch and up, straight, heavy.....	3.20	28.00
No. 1, 3/16 to 1/4-inch, branched, strong.....	2.90	25.00
No. 1, 3/16-inch and up, straight, strong.....	2.90	25.00
Special or Stub Grade, 3/16-inch and up, strong.....	2.10	18.00
No. 2, 2/16 to 3/16-inch, branched, strong.....	2.10	18.00
No. 2, 2/16 to 3/16-inch, straight, strong.....	2.10	18.00
No. 3, about 2/16-inch.....	1.40	12.00

PEAR SEEDLINGS—Washington-grown Bartlett

1/4-inch and up, branched, heavy.....	3.70	32.00
No. 1, 3/16 to 1/4-inch, branched.....	3.20	28.00
No. 2, 2/16 to 3/16-inch, branched.....	2.40	20.00
No. 3, about 2/16-inch.....	1.70	14.00

Order NOW for shipment when desired, after January 10.

If you did not receive our Fall Trade List, which was mailed September 16, write for your copy now. While some items are now sold out, we still have a good assortment of wanted varieties and grades.



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• SHENANDOAH IOWA •

One of America's Foremost Nurseries

E. S. WELCH, President • H. S. WELCH, Vice President • G. L. WELCH, Mgr., Wholesale Sales



AMERICAN NURSERYMAN

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The Nurseryman's Forte: To Make America More Beautiful and Fruitful

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CLOSING DATE—Present printing conditions require that more time be given for putting current issues of the American Nurseryman through the press. So if you send material for either the advertising or the news columns of the December 15 issue, please mail in time to reach this office by December 3.

Boost Profits! Sell...

LOWELL

WORLD'S LARGEST MANUFACTURER OF SPRAYERS AND DUSTERS EXCLUSIVELY



3 KEYS TO PROFITABLE SALES

1. **FULL PROFITS**—When you sell the Lowell line you make a substantial profit on each sprayer and duster you sell. There are no loss leaders or "cheap sprayers." You get full profit on each one.

2. **SELECTIVE DISTRIBUTION**—Your market is large and only highly ethical distributors are selected to sell the Lowell line.

3. **COMPLETE QUALITY LINE**—The Lowell line is complete and compact with a sprayer and duster for every use. This gives you fast turnover on small inventory. Fast turnover boosts profits quickly.

Write for full details today!

LOWELL
Manufacturing Co.

DEPT. 55, 589 EAST ILLINOIS STREET
CHICAGO 11, ILLINOIS

**QUICK,
SURE ROOTING
MEANS MORE
PROFIT**

WHERE AND HOW TO USE TRANSPLANTONE

Treat broad and narrow leaf evergreens, deciduous trees and shrubs. Soak the soil around the roots when planting or soak bare-root plants overnight in a barrel of the solution before replanting. The treatment will not interfere with proper hardening of the wood before winter.

It pays to use Transplantone solution when transplanting shrubs and trees. Transplantone-treated shrubs and trees suffer less from shock and wilt, fewer of them die, *more* of them start active growth sooner.

A LITTLE TRANSPLANTONE GOES A LONG WAY

One pound of Transplantone makes 160 gallons of solution for treatment of trees and shrubs or 1600 gallons of solution for seedlings and soft-tissued plants.

Reg. U. S. Pat. Off.
TRANSPLANTONE

- A 3-oz. can of TRANSPLANTONE costs \$1.00
- A 1-lb. can of TRANSPLANTONE costs \$4.00

Write today for our special terms to nurserymen.

AMERICAN CHEMICAL PAINT COMPANY
Ambler, Pa.

AMERICAN NURSERYMAN

F. R. KILNER, Editor

Editorial

THE NEW CONGRESS.

Out of the discussion as to action by the new Congress, in view of the Republican landslide, on issues bearing upon the economics of the day, comes the assurance that several proposals are certain of attention. These will be important as they affect business through their influence on public spending.

The OPA is winding up its affairs, without awaiting congressional action, and it looks as though by the new year rent control, at least in modified form, will be continued.

Other war controls will be removed by Congress, with the exception of a few important ones in the housing and export field. The result will be a reduction in the employees by government agencies for which no need remains.

Reduction in personal taxes is promised, and perhaps there may be some reduction in corporate income tax rates.

Stiffening in the attitude toward labor union demands is expected in the new Congress, although the members will probably not lose sight of the fact that 1948 elections will be approaching.

The sum total of action by Congress in such matters as the foregoing will be a lessening of the confusion and feeling of uncertainty on the part of the public. When homeowners and housewives, no less than business executives, feel that they can plan expenditures without abnormal influences affecting their plans, trade activity is likely to run on a more even keel.

ACCURATE ADVERTISING.

Established firms in the horticultural field take pride in the accuracy of their catalogs and their advertising. Upon it is based a considerable part of the prestige which they have built up with their customers. In times of strong demand and short supply, as at present, most plants move through regular trade channels, and few cases appear of inaccurate advertising.

But when stock is plentiful and cheap at wholesale, unscrupulous individuals make a profit by offers to the public that are at least misleading and at most untruthful.

Steps to correct this situation are

The Mirror of the Trade

sometimes talked of, but the most forward of any yet taken is that of the Horticultural Trades Association, the British organization of nurserymen and seedsmen, which will become a member of the advertising association in that country and therefore be in a position to put forward the views of the trade on certain types of advertisements.

Sometimes the truthfulness of an advertisement of horticultural merchandise is open to question only by persons acquainted with the item offered. The advertiser who offers the smaller sizes of bulbs at cheap prices is misleading when he creates in the

Every Friday is discussed some timely subject, over the signature of the organization, although the actual writing is assigned to individual members.

This is a service which does real good in any community and is invariably welcomed by local newspapers, because they receive authentic information, without bias or cost. At any time this is a commendable project for nurserymen, and it will be more desirable as an era returns when selling will be needed to maintain the demand for plant materials.

A SALES JOB.

Wide circulation is being gained by a pamphlet from the Congressional Record, containing an article written by E. F. Hutton. It urges a more dynamic sales job for the American way of life. Each reader of the pamphlet is urged to write to the president of the insurance company in which he has a policy and to the head of every business in which he has any money invested. It includes such suggestions as the following: "Tell him to be as dramatic in selling America as he has been in selling his soaps, brass, foods or fountain pens—his automobiles or his radios. Tell him to hire the best talent available to present facts, facts, and still more facts—and present these facts to the man on the street—out loud. Are we a downtrodden, frustrated, exploited people? Then why do peoples of every other land want to emigrate to America? Is our economic system obsolete, decrepit, broken down and in need of replacement by a glorious totalitarian state? Then why do they come to America asking us for gifts made by our system which they pretend to despise? Because we have the wealth their system will not create. And we have the wealth because we have the system that makes it—the free enterprise system—the competitive profit and loss system—the system in which every one of us can risk his savings, if he please, to build new business and new pay rolls."



minds of the public the impression that such bulbs are comparable to those of blooming size offered regularly. The offering of tender plants that the buyer assumes are hardy is likewise misleading, as are advertisements of vegetable and other tender plants at the wrong season. In the nursery field most common is the offering of seedling evergreens advertised as trees, whereas they will become so only after many years.

The publishers of our newspapers and garden magazines do not willingly mislead their subscribers, and the cooperation of recognized trade associations with the publishers, as abroad, could easily set a higher standard of accuracy in horticultural advertising to the public.

GROUP IN NEWSPAPERS.

Advice to the homeowners of the community is given through the columns of the local newspapers by the Indianapolis Landscape Association.

PREWAR sales and production figures are much out of date as a yardstick for present use. Not only has there been an increase of several million in the nation's population, but income levels and markets have changed decidedly in the interval.

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Originality in the Garden

By Gordon Morrison

We all realize the importance of novelties in every phase of horticulture, in amateur as well as professional gardening.

Novelty, or originality, heightens interest in gardening. Frequent introduction of really meritorious new varieties year after year sustains this interest. A new variety of flower or vegetable must indeed possess outstanding merits to achieve and maintain a high place in gardeners' esteem, since there are so many well proved and highly regarded old varieties upon which successful gardening is largely based.

Greater strides have been made in successful, purposeful plant breeding during the past forty years than had been made during the preceding 400 years. It is my purpose to outline the fundamentals of seed-breeding science that make possible rapid and satisfactory achievement. These fundamentals will be illustrated by means of practical plant-breeding projects that have yielded meritorious new varieties of flowers and vegetables.

Plant Genetics.

Plant genetics is the modern science of seed breeding. Progressive seed breeders employ the basic principles of genetics in developing new and better varieties of vegetables and flowers to meet the changing needs and fancies of gardeners.

Plant genetics is based upon accumulated knowledge, chiefly upon the knowledge provided by a few

important biological discoveries that have been checked and rechecked for the soundness of the principles revealed.

Listed in order of discovery over recent centuries these revelations explain the cellular structure of organisms, the nature of sex in plants, the laws of heredity and the physical basis of heredity.

Each organism is composed of cell-like units. Each cell increases in size. When a limit has been reached a separating wall forms, producing two cells. Growth consists in a continuous repetition of this process. As development proceeds, specialization occurs, yielding root tissue, stem tissue, leaf tissue and floral parts.

Mutation, or sudden change, may arise within vegetative cells to give rise to bud sports. If the change is desirable, the bud sport or sectorial variation may be propagated at once, by vegetative means, as a new variety. Red Spy apple and many such modified varieties of fruits are well known representatives of this type of variation, which is especially valuable to nurserymen.

The exact nature of sex in plants was explained fully only a few centuries ago.

Flowers are modified stems that bear sexual organs.

There is a wide range of flower types. Asparagus has separate male and female plants. Corn and cucumber have separate male and female flowers, both types on each plant. Many kinds—cabbage, lettuce, peas

and tomato—have "perfect" flowers, with male and female elements within the same structure. A zinnia flower is actually composed of many flowers of various sexual types.

Cross-fertilization and consequent outbreeding is typical in many vegetables, including spinach, asparagus, cabbage, radish, squash, corn, rhubarb, melons and cucumber. Self-pollination and consequent inbreeding is typical in many kinds, such as peas, beans, lettuce and tomatoes.

Corn pollen is carried to the silks, or stigmas, by air currents, and there is almost 100 per cent crossing between plants. Squash pollen is carried to the female flowers by insects, and there is much crossing between squash plants. The flowers of garden peas and lettuce are naturally self-pollinated because the stigma becomes smeared with pollen from anthers within the same protective floral envelope.

The flowers of cabbage, radish, other vegetables and many decorative flowers are complete, with male and female parts in each flower, but require some outside agency to transfer pollen from anthers to stigmas. Insects, principally bees and moths, become dusted with pollen in flying from flower to flower and from plant to plant. Some of this haphazard collection of pollen becomes dislodged and smeared upon the stigmas of the many flowers visited.

Many cultivated kinds of flowers and vegetables are self-fertile. The eggs of these plants are capable of



A portion of Burgess' blizzard belt seed-breeding station, near Galesburg, Mich. Selective inbreeding conducted in this area of severe winters and relatively short growing seasons of wide extremes of temperature and moisture yields dependable varieties of vegetables by reason of rigid natural selection or natural elimination of unfit. The varieties are, at the same time, made acceptable for the use of most critical consumers by reason of concurrent artificial selection for type and quality by seed breeders who are well acquainted with consumers' preferences and trade requirements.

being fertilized by sperms borne by pollen of the same plant. However, some kinds are self-sterile, even though eggs and pollen are produced on the same plants. Zinnias and related kinds of plants are self-sterile, or tend to be so. In any case, the fertilized egg becomes the embryo; the ovule and the enclosed embryo become the seed, and the ovary becomes the fruit tissue. The ovary in corn is the thin hard cover of the kernel. The ovary in the bean becomes the pod.

Mendel's Principles of Heredity.

Mendel traced from generation to generation in the garden pea the breeding behavior of such contrasting individual characters as tall and short stature, colored and white flowers, smooth and wrinkled seeds. He also recorded the breeding behavior of numerous characters in relation to each other. The principles Mendel discovered by this means are known as Mendel's laws.

Law of Dominance: When Mendel crossed two pure-breeding plants of garden peas, one of tall stature with one of dwarf stature, the first hybrid generation was uniformly tall and resembled the tall parent. He determined that the dominant hereditary factor for tall stature prevailed over the factor for dwarf stature, which he termed recessive.

Law of Segregation: When Mendel allowed plants of the uniformly tall hybrid generation to become self-fertilized, the offspring of any individual plant segregated into two distinct classes, tall and short, in the proportion of three tall to one dwarf plant. When Mendel allowed individuals within the two classes of this second hybrid generation to become self-fertilized, each dwarf plant produced uniformly dwarf offspring. One out of three of the tall plants bred true for tall stature; two out of three of the tall plants produced tall offspring and dwarf offspring in the proportion of three tall to one dwarf. While all of the tall plants in the second generation looked alike, two out of three of them were evidently carriers of the hereditary factor for dwarf stature.

Law of Independent Assortment: Mendel studied the inheritance of two pairs of characters in relation to each other. He crossed back to a pure-breeding dwarf pea with wrinkled seeds a plant that was tall and smooth-seeded in appearance, but which carried the recessive factors for dwarf stature and wrinkled seeds. He obtained thereby offspring of four types in equal numbers—tall plants with smooth seeds, tall plants with

wrinkled seeds, dwarf plants with smooth seeds and dwarf plants with wrinkled seeds. The characters assorted independently of each other among the offspring and independent of the manner of their association in the original parents.

Exhaustive research has since shown that not all hereditary factors are inherited in such a simple manner as those Mendel used. Dominance is not always complete; sometimes the hybrid is intermediate in character. Some characters require for expression the interaction of two or more, or even numerous hereditary factors. While many characters segregate independently of one another in the generations following a cross, some characters tend to remain associated in succeeding generations

wall forms through the enlarged cell producing two daughter cells. Each of these soon regains the size of the original cell, which it resembles closely in cell content. In the flowering plants the growing regions become largely localized at certain points, and special root tissue, leaf tissue and sexual, or floral, parts develop.

Chromosomes are microscopic, relatively dense, usually rodlike particles that are contained in the nucleus of each cell. The chromosomes occur in two sets in the vegetative or body cells, one set having been derived from the male and one from the female plant. The chromosomes are reduced to a single set of particles in the sex organs of the flowers.

During the development of sex cells there is a random distribution of male and female-derived chromosomes, which provides for the segregation and recombination of hereditary determinants in accordance with Mendel's laws. When an egg cell is fertilized by a male cell the chromosome number is restored to two sets in the cells of the resulting embryo and subsequent plant.

Microscopic study of the cells in conjunction with observation of inherited traits has shown that the chromosomes are the principal means by which hereditary factors are handed on from generation to generation. The chromosomes are ordinarily definite in number in the cells of any given species. They are usually more or less definite in shape and are composed largely of material known as chromatin.

The chromosomes carry, in bead-like arrangement, the underlying hereditary factors, or genes. The genes are sometimes defined as the basic units which, often by interaction with other genes, determine and initiate largely, if not entirely, the development of Mendelian characters. Thus there are genes for color, for stature, for flower type and for innumerable other features. For instance, a "short" garden pea has in its hereditary make-up two recessive genes for short stature. A pure-breeding "tall" garden pea has two dominant genes for tall stature.

Many of the hereditary determiners, or genes, which are contributed together by a parent in a cross appear independently of one another among the offspring, as demonstrated by Mendel's laws. This is because the genes for these characters are located on separate chromosomes.

The tomato characteristically has twelve pairs of chromosomes. Since many determiners are required to account for the almost innumerable characters which make up any va-

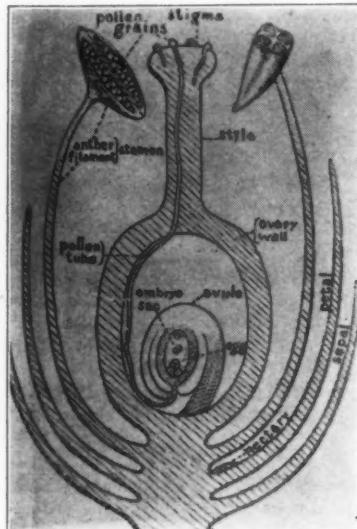


Diagram of a Perfect Flower.

just as they were associated in either parent. These associated factors are inherited in groups in typical Mendelian manner. However, experience has shown conclusively that the basic principles of heredity discovered by Mendel apply generally in plants and animals.

Physical Basis of Heredity.

Except in vegetative propagation, a plant is derived from a single cell, the egg, which has been fertilized by a male cell, the sperm, contributed by a pollen grain.

The fertilized egg within the ovule develops to become the embryo. All cells of the seedling which develop from the embryo are engaged primarily in the building of living matter from nourishing materials. Each cell increases in size and when a definite limit has been reached a separating

riety of tomato, it follows that each chromosome must consist of many genes. Extremely critical research has shown this to be true. Each chromosome is, in fact, a group of linked genes, or hereditary determiners. Linked genes tend to remain associated in subsequent generations. This accounts for the persistence of certain characters in inheritance in conjunction with certain other characters. This persistent association of linked genes is not invariable. The linkage is sometimes broken, and this sometimes gives rise to individuals with particularly valuable characters.

Practical Seed Breeding.

All features of varietal importance behave in heredity according to Mendel's principles.

New characters or new combinations of hereditary characters arise through mutation and by means of hybridization. Mutation is a sudden variation, brought about by changes in the chromosomes within the cell, which subsequently is passed on through inheritance. Hybridization is the process of crossing organisms of unlike hereditary constitution, thereby producing first generation offspring which possess hereditary factors for the traits of both parents.

Mutations, or sports, usually arise spontaneously. Hybridization occurs generally in nature and is still an important source of new varieties. However, artificially controlled hybridization has been practiced commonly by plant breeders, especially since the rediscovery of Mendel's laws.

Regardless of the manner of origin of variations and new combinations in seed-propagated plants, the prospective new variety must be brought to a state of uniformity by means of single plant selection, or selective inbreeding. This is done to establish a desirable line as pure as natural limitations permit.

Among the features that must be considered are hardiness, earliness, disease resistance, productivity, table quality, attractiveness and adaptability to special requirements.

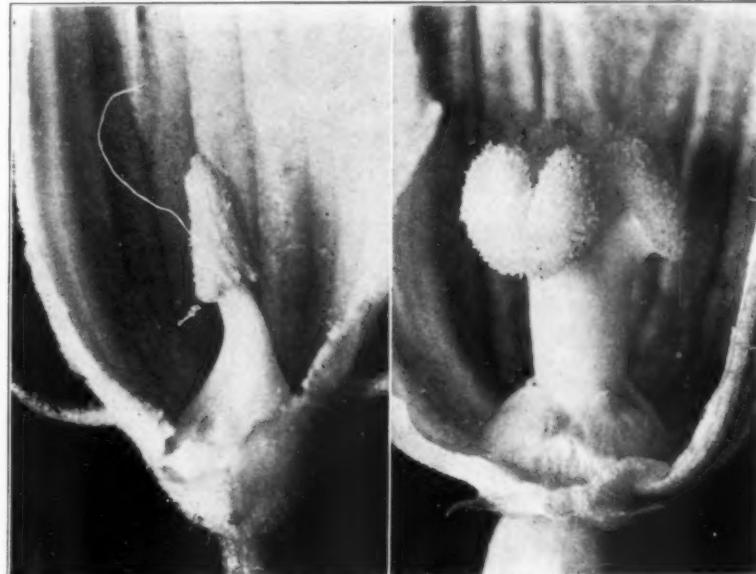
Heredity earliness and hardiness are obtained by conducting seed-breeding operations generation after generation in localities where only the desirably early and hardy survive. Selection under such conditions generation after generation has not added anything to the plants which compose the breeding stocks derived in this manner. However, natural selection has eliminated in the course of generations all those plants that did not possess inherent earliness and hardiness. Disease-resistant varieties

are developed from naturally resistant plants that have survived while their fellows have perished through disease; or they are originated by selecting desirable plants growing under conditions of exposure to disease. Capacity for high yield is achieved through selecting in generation after generation only those plants that show superior yield under either normal or actually adverse circumstances.

The single plant as a whole is the unit of selection. This is readily understood when we reflect that an egg

is equally desirable in all respects. When such uniformity has been achieved within a breeding culture of vegetables or flowers, seeds from any part of any plant will yield plants that are equally uniform and desirable.

No discussion of present-day plant breeding would be complete without some reference to a recently devised laboratory means of inducing striking heritable mutations. I refer to the use of colchicine and other chemical



Male, or staminate, flower (left) and female, or pistillate, flower (right) of winter squash. Both types occur on the same plant. Ordinarily the male flowers are first to appear, followed in due time by female flowers, and there are usually plenty of both types from then onward to provide fresh male flowers to furnish pollen for bees to carry to fresh female flowers.

cell fertilized by a sperm from a pollen grain gives rise to the embryo within a seed. The hereditary factors furnished by the egg and the sperm determine the hereditary constitution of the embryo and the resulting plant, except in a few rare cases.

The informed seed breeder adheres closely to a high standard of excellence in his breeding operations with vegetables and with decorative flowers. If the plant of his choice represents a pure line, seeds from the first flower or fruit to ripen are of no more and no less value than the seeds that ripen later. If the plant is from a variable stock or from a hybrid, a sample of seeds from the earliest ripened fruit on the plant will show the same variability among the offspring as a sample of seeds from the last fruit to ripen on the same plant. The seed breeder must continue his selective inbreeding gen-

agents which disrupt ordinary growth processes temporarily in living tissues. When normal growth is resumed after treatment, affected cells, groups of cells, branches or entire plants are found to have doubled cells with doubled dosages of heredity-determining factors.

In our own experience, this method has yielded robust zinnia plants with gorgeous 7-inch flowers and other kinds with equally striking sizes and colors of bloom. A serious limitation in the use of this technique by commercial seed breeders has been the rather general tendency for the new types to be extremely shy seeders.

Seedsmen's lists have been practically remade during the past twenty years. Old favorites have been streamlined to meet modern needs of gardeners, shippers and processors. New varieties have been developed by crossing and selective inbreeding.

Hybrid vigor has been widely used in sweet corn, chiefly by means of Golden Cross Bantam.

Modern Breeding.

A few new varieties of flowers and vegetables will be mentioned here as a means of illustrating modern methods of seed breeding.

Plentiful is a new green-pod variety of snap bean that is unusually productive and rust-resistant. It was developed in response to a demand for a black-seed Bountiful type. Bountiful (buff seeds, green pods) was crossed with Sure-crop Wax (black seeds, yellow pods). The first generation plants were, in appearance, just the type desired; namely, green-podded with black seeds. In this instance, black seed color and green pod color were dominant. Since each hybrid carried factors for buff seeds and wax pods, it was necessary to carry on selective inbreeding for a few generations to establish a pure-breeding type which included all the desired characters of both parent varieties and from which the undesired characters had been excluded.

The cabbage-growing industry was threatened some years ago by a destructive soil-borne disease known as yellows. A few plants were found which bore enough natural resistance to survive where others died. Continuous reselection of survivors amid heavy infestation soon yielded naturally resistant varieties of good quality and uniformity. The same procedure has been followed in developing disease resistant strains of other kinds of vegetables.

Straight-8 cucumber and Early Prolific Straightneck squash are similar examples of improving yielding capacity by means of inbreeding desirable specimens. Both of these varieties are derived from plants which bore an unusually high ratio of fruit-producing flowers. Selective inbreeding fixed this desirable feature and yielded new varieties capable of yielding many more fruits per plant than ordinary varieties.

Early Chatham tomato, developed by selective inbreeding in the upper peninsula of Michigan, produces ripe fruits in fifty to fifty-five days after setting the plants in the field. Fortunately, this extreme earliness is combined with good size of fruits that are perfectly smooth.

Burgess' Crack Proof tomato is a midseason variety of excellent size and color which has been selected for generations for capacity to yield fruits free of blemish under conditions that cause much loss from cracking in other varieties.

Pearly Gates is a white-flowered

variety of morning-glory derived by selection from Clark's Early, or Heavily Blue. A white-flowered sport, or segregate, occurred in a field of the parent variety. In an instance of this kind, isolation and controlled pollination soon yield a pure-breeding new strain.

A California flower breeder found an unusually vigorous but unattractive rouge in his sweet pea-breeding cultures. Using this as one parent, he obtained hybrids with various standard types. By means of applying Mendelian principles in selective inbreeding, he obtained a whole new class of sweet peas that is interme-



The author examining half-grown fruits of winter squash that have been "selfed" artificially—a female flower on a choice plant has been protected against insect-borne pollen and has been pollinated by hand by means of pollen from a male flower of the same plant. Controlled pollination enables accurate selective inbreeding that yields, in due time, extremely uniform, dependable breeding cultures that are increased safely in large acreages by means of geographic isolation of fields with due regard for locations of bee colonies.

ate in blooming season and which succeeds under drought conditions unfavorable to ordinary sweet peas.

Present Trends.

At the Burgess seed-breeding station, near Galesburg, Mich., much time is being devoted to the special needs of family food gardeners, particularly those whose small gardens must somehow serve the purpose of larger gardens. Bush pumpkins and bush winter squashes of prolific nature but extremely restricted growth show promise of general usefulness in small gardens where ordinary pumpkins and squashes would occupy too much space. Trip-L-Crop Climbing tomato yields enough fruits from a few square feet of soil to supply an ordinary family with tomatoes for immediate use and for canning.

Many families will soon have quick-freezing facilities in their homes. Fortunately, we find that the high sugar content, the good green color and the pleasing texture and flavor that are features of favorite home garden varieties are likewise the features of those varieties that yield good frozen packs of vegetables. Consequently, it has been relatively easy to develop a rather complete list of vegetable varieties especially adapted for quick freezing and deep freeze storage.

Nature works hand in hand with the seed breeders in localities of relatively short growing seasons of wide extremes of heat and moisture. Under such conditions, only the hardy, dependable producers survive to produce acceptable quantities of seeds. At the Burgess seed-breeding station, members of the seed-breeding staff use their talents in selecting as breeding stock only those hardy dependable plants which possess also the features of good quality and appearance which appeal to the gardener and consumer. Varieties that have been developed under such circumstances are tested throughout the country for regional adaptability and widespread usefulness.

In the early stages of a breeding project, pollination is controlled by means of various devices, such as paper bags and cloth cages. Such means of breeding control become impractical when new varieties have been developed to a degree of uniformity and desirability that warrants large seed production for commercial purposes.

Pure-bred seeds are kept pure and safe against harmful cross-pollination. Acreages of distinct varieties of corn and other wind-pollinated crops are separated far enough to prevent crossing between varieties.

Acreages of distinct varieties of insect-pollinated crops, such as squashes, are separated widely by distance and with relation to the location of bee colonies. Great care is taken to avoid placing acreages of distinct varieties within the same line of flight between the bee colony and the most distant acreage served by the bees. Bees do indeed fly in a bee-line and may visit during the same pollen or nectar-gathering trip two varieties of squash that lie in the same line of flight. Acreages that are well separated with due regard to flight habits of bees may be assured of adequate pollination and still be safe against harmful cross-pollination.

THE Cargill Greenhouse & Nursery, at Lawton, Okla., are owned by Ira Cargill.

Five Quarantine Hearings at Capital

Five public hearings on quarantine proposals have been set by the bureau of entomology and plant quarantine of the United States Department of Agriculture for December 5 and 6, at room 3106, South building, U. S. D. A., Washington, D. C.

The dates of these hearings are the same as for the national garden conference called by the United States Department of Agriculture, postponed from the original dates in December, so that there will be opportunity for a liberal attendance of garden-minded persons at the quarantine conferences.

Hearings will be on proposals to restrict or prohibit entry of elms from Canada, entry of citrus nursery stock, citrus fruits and cut flowers from all foreign countries, and entry of fruits, vegetables, citrus and other plants from Hawaii.

The hearings have been called in compliance with the plant quarantine act of 1912, which authorizes and directs the Secretary of Agriculture to consider the establishment of plant quarantines to protect American plant growers from the introduction of insect pests and plant diseases new to or not widely distributed in the United States. Any interested person may present his views at these hearings and may file his opinion, data and arguments with the chief of the bureau of entomology and plant quarantine by the day of the hearing.

For Dutch Elm Disease.

The hearing to consider restricting or prohibiting entry of elms and elm products from Canada and other foreign areas north of the United States, on account of the Dutch elm disease, will be held before the bureau of entomology and plant quarantine at 10 a. m., December 6. The hearing has been called by N. E. Dodd, Acting Secretary of Agriculture, because the Dutch elm disease, caused by the fungus *Ceratostomella ulmi*, occurs in the Dominion of Canada and there is now a movement of elm materials from Canada to the United States which may serve to introduce the disease in this country. The possibility that movement of infected elms from the Dominion of Canada to Newfoundland, Labrador, St. Pierre, Miquelon and adjacent islands might result in the establishment of the Dutch elm disease in these areas makes it necessary to consider prohibiting or restricting the entry of elms from all the foreign area north of the United States.

Existing plant quarantine regulations, in effect since January 1, 1935, prohibit the importation from the continent of Europe of seeds, leaves, plants, cuttings and scions of elm and related plants; logs of such plants; lumber, timber or veneer of such plants if bark is present on them, and crates, boxes or other articles manufactured in whole or in part of the wood of elm or related plants, if the wood is not free from bark. It is therefore necessary to consider the advisability of revising the present quarantine prohibiting the entry of elm materials from Europe to include restrictions or prohibitions on the importation of such materials from foreign areas north of the United States.

Citrus Nursery Stock.

The advisability of further protecting citrus production in the United States from plant diseases attacking citrus nursery stock will be considered at a hearing to be held at 10 a. m., December 5. The existing plant quarantine prohibits the entry of nursery stock of several genera of the rutaceous subfamily aurantioideae from all foreign countries on account of citrus canker, caused by *Xanthomonas citri*. As additional genera of that subfamily and genera of the rutaceous subfamilies rutoideae and toddalioideae are also susceptible to attack by the disease, it is necessary to consider the revision of the existing prohibition to include plants and parts of plants, except seeds, of all genera, species and varieties of the rutaceous subfamilies rutoideae, toddalioideae and aurantioideae.

Citrus Fruits.

Additional protection of citrus production through the quarantine of citrus fruits susceptible to certain plant diseases will be considered at a hearing to be held December 5 at 10 a. m. One destructive disease of citrus which occurs in other parts of the world and is new to or not widely distributed in the United States, Puerto Rico and Hawaii is sweet orange scab, caused by *Elsinoe australis*. This disease is known to occur in Brazil, Argentina, Uruguay and Paraguay, where it attacks trees and fruit of the following species and their varieties: *Citrus aurantifolia*, *C. limon*, *C. reticulata*, *C. sinensis*, *C. paradisi*, *C. aurantium*, *C. hystrix* and *Fortunella margarita*. Another such disease is *Cancrosis B*, a bacterial disease which is known to occur

in Argentina, Paraguay and Uruguay, where it attacks trees and fruit of the following species: *Citrus aurantifolia*, *C. aurantium*, *C. limon*, *C. medica* and *C. sinensis*.

Another disease, citrus canker, caused by *Xanthomonas citri*, was formerly known to occur only in eastern and southern Asia, the Malayan Archipelago, the Philippine Islands, Oceania (except Tasmania, Australia and New Zealand), Japan and the Union of South Africa. Recent information indicates that this disease has been eradicated from the Union of South Africa and is now present in the additional countries or islands of Burma, Mozambique, Mauritius, Seychelles and New Zealand. In these areas it attacks trees and fruit of plants of the rutaceous subfamilies rutoideae, toddalioideae and aurantioideae. Although citrus canker at one time did occur in parts of the continental United States, from Texas eastward to the Atlantic, persistent eradication programs have been carried out, and the disease has not been found anywhere in the United States since 1942. The existing plant quarantine which prohibits or restricts the entry of fruit of various kinds of citrus plants attacked by the citrus canker disease does not include all the commodities that may carry important diseases of citrus which do not occur in the continental United States, Puerto Rico and Hawaii; nor does it prohibit or restrict their entry from all countries where such diseases occur. It is therefore necessary to consider the advisability of revising existing prohibitions and restrictions to provide for these conditions.

Cut Flowers.

Because of increases in speed of transportation due to air transport, it has been deemed necessary to consider the advisability of restricting or prohibiting the entry of cut flowers from all foreign countries on account of the citrus black fly, a cercospora leaf spot and other injurious insects and plant diseases, which might be transported thereon. A hearing with this purpose in mind will be held December 5 at 2 p. m.

Hawaiian Imports.

The further prohibition or restriction of the entry of fruits, vegetables, citrus plants and other commodities which may carry insect pests or plant diseases into the mainland of the United States from Ha-

waii will be considered at a hearing which has been called for December 6 at 11 a. m. Plant quarantine regulations which have been in effect since May 1, 1914, have prohibited and restricted the movement into the U. S. of many kinds of fruits and vegetables, because of the occurrence in Hawaii of two important fruit flies, the Mediterranean fruit fly and the melon fly. The recent discovery in Hawaii of infestations of the mango fruit fly and certain other insect pests and plant diseases, including a serious disease of citrus trees and fruits known as citrus canker, not known to occur within continental United States, has created new problems of plant protection.

Under existing plant quarantine regulations, the movement of citrus fruit from Hawaii to the continental United States is not allowed. These regulations, however, do not govern the shipment of citrus nursery stock which may be a means of introducing citrus diseases such as citrus canker to the mainland. While there is at present no commercial movement of such stock from Hawaii, it appears advisable to provide appropriate safeguards to prevent the possible introduction of citrus diseases.

PLANT REGULATORY OFFICIALS CONFER.

Continuation of the federal Dutch elm disease quarantine was the subject of a conference at Columbus, O., November 25, called by the federal bureau of entomology and plant quarantine, at which state regulatory officials were expected to present their views on the situation. Revocation of the federal quarantine on the basis that it is a trade barrier is opposed by those who believe such action would be followed by a great number of state quarantines. To avoid the latter, there is the possibility of revising the present federal quarantine so as to permit the movement of nursery-grown elm trees that have been thoroughly inspected, and otherwise removing the trade barrier features of the present regulation.

Plant regulatory officials of eight north central states met at Chicago, November 1, with several officials of the United States Department of Agriculture, to discuss proposals as to barberry eradication for the control of black stem rust of grains. The war prevented a full program of such eradication because of lack of manpower and funds. A resolution was passed requesting that the Association of Directors, Commissioners and Secretaries of Agriculture, at the an-

nual meeting at Detroit later in the month, pass a resolution urging the Congress and the United States Department of Agriculture to provide adequate funds so that this important disease control measure can be completed as quickly as possible.

HORMONES MAY PREVENT FROST DAMAGE TO FRUIT.

Northern fruit growers may be saved millions of dollars in fruit that would otherwise be damaged by late frosts if an experiment under way at Michigan State College proves successful.

Specialists in the department of horticulture are working on a project to delay the blossoming of fruit trees by the use of plant hormones (growth regulators), thereby avoid-



Dr. Charles Hamner injects hormones into a young apple tree as part of an experiment to delay blossoming until danger from frost is past.

ing late April and early May frosts that annually take their toll of frozen apple, cherry, peach, pear and plum blossoms in the northern tier of states. The experiment is designed to aid growers in states like Michigan, where only 1,250,000 bushels of apples were produced in 1945, compared with the average annual harvest of 7,681,000 bushels for the preceding 10-year period. Late frosts nipped most of Michigan's 1945 apple crop.

Hormones are naturally present in all plants and trees, according to Dr. Charles L. Hamner, who is in charge of the experiment. But the researchers believe they can control the growth process and retard blooming by injecting additional hormones into the trees.

They got their idea after noticing that trees sprayed with naphthalene-

acetic acid just before harvest time to prevent fruit droppage bloomed somewhat later the next spring. The specialists theorized that injections of the same hormone into the trees in the spring might forestall formation of blossoms long enough to avoid late frosts.

During the first year of the experiments, which were started early in 1946, the researchers tried several methods of applying the hormones—by application of pastes containing the hormones to artificial wounds on roots and branches, by application of the hormones on the ground and thence into the roots, by actual injection into branches with a hypodermic needle and by spraying. The injection method seemingly produced the best results, but continued research was found to be necessary in order to determine the correct concentration of and time of application of the hormones.

Trees receiving the hormone treatment last spring showed slight late-blooming effects, but not enough to make the project practical. The workers expect to continue their project three or four more years. Applications in the fall and early winter will also be made so as to determine the exact time to treat a tree for the desired late-blooming effect.

"If the experiment is successful," Dr. Hamner says, "We can not only retard the blossoming of fruit and avoid frost kill, but the later blooming will afford honeybees a better chance to pollinate the fruit, because the insects will be more active as the weather becomes warmer. Of course, the project is strictly in the experimental state, but several years of development may mean a great saving to the fruit industry."

The entire 1945 fruit crop in Michigan was valued at \$20,433,000, less than half of what it would have been if frosts had not damaged the apple, cherry and pear crops.

Dick Frazier.

EARL V. TOPPER, 2807 West Warren avenue, Denver 10, Colo., will add nursery trees and shrubs to his established line of perennials and berry plants.

OPENING of a new shop at 7328 Ranier avenue, Seattle, Wash., by Rainier Valley Nursery & Florists, was recently announced. It is operated by E. R. Van Winkle and Irma Levy.

EARL E. MAY, proprietor of Earl E. May Seed Co., Shenandoah, Ia., has been critically ill in a hospital at Duluth, Minn., where he suffered two strokes while at the hospital for a physical checkup.

Computing Value of Shade Trees

Occasionally nurserymen, landscape gardeners, arborists and homeowners find themselves in a position in which it is necessary to estimate the value in dollars and cents of trees and shrubs. Such evaluation may be useful in lawsuits concerning damage to property, as a basis for income tax deduction following property destruction by hurricanes or other storms, for determining price in selling and buying property, or simply for a statement of tree value.

That trees are of intrinsic value few will deny. Records are available of unusually high values placed upon magnificent trees and of large sums paid for having trees moved. Only recently, however, have methods been established to show what investment in landscaping is worth, outside its visible beauty.

In an effort to encourage the use of trees and shrubs by homeowners, the Massachusetts Forest and Park Association sent a questionnaire to several hundred nursery, landscape and realty organizations and found that the value of the average home can be increased nine per cent through the use of trees, shrubs, vines and other ornamental plants. This questionnaire contained three questions based on the average home, in a residential section where land averages 15 cents per square foot, and where a house and bare lot are worth \$8,000. It was found that the difference in value between two homes, on adjoining lots, one on bare land and the other artistically planted, ranged from one and two-tenths per cent to 26.5 per cent, with the average answer nine per cent. On the basis of 100 points, it was decided that the average of twelve and one-half points could be credited to landscape beauty. And lastly, it was found that landscaping results in quicker sale. Other real estate surveys show that money spent on landscape planting brings considerably greater returns over a period of ten years than money invested at eight per cent interest. After such findings, it would be conservative to say that a landscape investment of \$200 would triple itself in a few years. Thus, in anticipation of future sale, the landscape improvement, increasing in value, should help to offset the decreasing value of the house itself.

In 1938, when property owners suffered heavy losses in the New England hurricane, many persons wished to know the values of trees and shrubs to determine income tax

deductions. Estimates were made by real estate appraisers in conjunction with landscape architects and foresters, but these dealt mainly with large estates. After more recent storms caused severe damage in the south and east, property owners were faced with the problem of tree evaluation. If one anticipates income tax deductions, it is advisable to fortify oneself with information concerning the exact number, size, kind, condition and location of the trees and shrubs. Photographs of the plants, before and after the damage, are good evidence.

While one may know the initial cost of the planting, it is not always easy to determine subsequent values. Methods for determining such values are many and varied. Cases have occurred in which the value of a tree has been figured at the cost of replacing it with one of equal size and of the same species. This method is not entirely satisfactory because transplanting costs vary greatly with location and other extenuating circumstances. And this method makes no allowance for the fact that a newly transplanted tree seldom equals an established tree in grace and beauty.

In determining tree value by the diameter method, it is usually \$10 per inch. This is a fair value for small trees up to five inches in diameter. Above this size, the value per inch should be increased on a sliding scale, ranging from \$12.50 for 6 to 7-inch diameters to \$50 for 56 to 60-inch diameters. If these values as computed are modified as to species, physical condition and location, the resulting figures may be considered fair values.

Another method of tree evaluation is to multiply the number of inches of trunk diameter by the front-foot value of the property on which it is growing. Thus a tree ten inches in diameter, on property valued at \$20 per foot, would be worth \$200. Here again, species, location and physical condition must be considered if this value is to be of any use.

A fourth and highly superficial system is that of considering tree value to be the difference in the value of the property immediately before the damage to the tree and just after the injury. This leaves the evaluation in the hands of real estate appraisers, who usually have no conception of real tree values.

Another formula was suggested by the late Dr. E. P. Felt, of the Bartlett Tree Research Laboratory, which first appeared in 1929. The main feature of the formula is the determination of a basic value calculated on the basis of \$1 per sectional square inch of the trunk diameter at breast height, and then subjecting this value to certain modifications depending upon species, location, physical condition and residential land value. The sectional area is used instead of the diameter because it more nearly agrees with the increased value of the tree as it gains in size. The sectional inches in square inches are determined by squaring the diameter and multiplying by .7854. This gives the basic value of the tree. Dr. Felt then grouped the trees into a list of species rated 80 to 100 per cent, 60 to 80 per cent, 40 to 60 per cent and 30 to 50 per cent. Dr. L. C. Chadwick has expressed the belief that this list should be enlarged and revised and he offered, as a

Chart of Factors Influencing Value of Shade Trees.

Diameter tree inches	Basic Value	Species	Location	Physical condition of tree	Acre or lot	Percent. value Residential land value
6	\$ 28				\$ 500	Reduce by 75
8	50				1,000	Reduce by 55
10	79				1,500	Reduce by 30
12	113				2,000	Unity, no change
14	154				4,000	Increase by 50
16	201				6,000	Increase by 100
18	254				8,000	Increase by 140
20	314				10,000	Increase by 180
22	379			5 to 100 per cent by units of \$.	12,000	Increase by 200
24	453				14,000	Increase by 220
26	531				16,000	Increase by 235
28	616				18,000	Increase by 250
30	707				20,000	Increase by 265
32	800				22,000	Increase by 275
34	907				24,000	Increase by 285
36	1018				26,000	Increase by 295
38	1135				28,000	Increase by 300
40	1257					
44	1524					
48	1810					

basis for comparative value, the trees according to his appraisal of them in his booklet, "Compiling a New Nursery List." Those in the selected list might be rated 80 to 100 per cent, those in the secondary list, 60 to 80 per cent and those in the discard list below 60 per cent. Any modification of these figures may be left to the good judgment of the appraiser.

Dr. Felt devised the chart which is shown on the preceding page to show how species, location and physical condition affect the value of the tree, which is modified according to units of five from five to 100 per cent. He suggested that the resulting figure be further modified, according to residential land value as indicated in the chart. He stressed that residential land value is quite different from commercial land value. The influence of this factor is not easily determined by percentage increase and decrease and percentage values may have to be changed in accordance with the appraiser's good judgment.

E. H. Niles, of the White Elm Nursery Co., Hartland, Wis., has suggested an additional method for tree valuation. This course is to estimate the annual rental value of each tree to the property and to multiply by the number of years of life expectancy of the tree. However, in methods such as this one other important factors of evaluation should not be overlooked.

No one method is best or perfect. Dr. Felt's formula brings out the modifying factors of species, physical condition, location and land value that are usually overlooked. This and other methods can be used if they are applied with considerable good sense and judgment on the part of the evaluator.

Appraising Damage.

There are various means of appraising damage to trees. The following legal principles were outlined by H. H. Chapman in his standard work, "Forest Valuation," now out of print:

a. Damages are payable in money. Compensation, not physical restoration, is required.

b. The difference in value of the property before and after the damage is the measure of damages. The value of the portion destroyed is not in itself the measure of damages, but it is a means of ascertaining this difference in total value. Soil and trees are real estate. The value of this real estate as a whole, before and after the injury, is the measure of damages.

c. Damages must be appraised on the basis of the most profitable use to which a property is adapted, as indicated by the use of similar contiguous property. Sale value may or may not be a correct index of real value.

d. Values must ordinarily have a commercial or utilitarian basis, but aesthetic values, or the value of "legitimate gratification," must be recognized whenever based on elements generally accepted by the public at large. Sentimental value peculiar to the owner cannot be admitted.

e. Loss of income may be made the basis of damages, but this loss should be discounted to the present and will then equal the loss in capital value.

f. Cost of restoration, while frequently ruled out, is admitted when



O. R. Adams.

shown to be less than value or when value is difficult to determine.

g. Ordinary "profits" or income is the basis of damages. Excessive profits, which do not allow for normal losses, and speculative or contingent profits, which depend upon uncertain future factors, such as increased prices, are not admitted. The element of time, intervening between the damage and the realization of profit, does not bar the consideration of these profits provided they are reasonably certain to occur and are properly discounted.

h. Damages must be actual, present, imminent or reasonably certain to occur. The damage itself may be indirect, but it must be proximate, or traceable directly to the offending cause, as for instance, the destruction of crops, due to cattle, through leaving a gate open. The physical destruction of property by fire is an actual present damage. The cause may

be a spark from a defective locomotive igniting the debris upon an improperly cleared right of way, several miles from the property destroyed. The determination of the money value of the damage is the only element of uncertainty in the process.

O. R. ADAMS.

O. R. Adams, president of the Washington chapter of the American Association of Nurserymen, is manager of the Richmond Nurseries, at Richmond Beach, Wash. Ray Adams had left the nursery business, after having been associated with it for nine years, to work in theater sound, intercommunication and telephone engineering, but upon his father's retirement, six years ago, was taken in as a partner of the firm, and the management of the Richmond Nurseries has been under his direction since 1940. Mr. Adams served in World War I.

Richmond Nurseries were organized in 1903 by Ray Adams' father, J. W. Adams, as a fruit tree nursery, occupying five acres of virgin timberland between Seattle and Richmond Beach. Many commercial orchards secured their plantings from the Richmond Nurseries in those pioneer days. Ray Adams believes that the policy of insuring customer satisfaction, established by his firm with the first sales, has been a large factor in the success of his business.

Additional land has been acquired through the years, until now more than twenty-five acres are in plantings of the Richmond Nurseries. Nursery stock, in addition to the large fruit tree plantings, includes shade and nut trees, flowering and ornamental shrubs, broad-leaved evergreens, conifers, perennials and rock plants. A thriving business has been built with dwarf and espalier trees.

AT present connected with the Twin Cedar Nurseries, Georgetown, Ind., Kermie H. Adamson will establish the Adamson Nursery, at Palmyra, Ind., next January.

WONDERLAND NURSERIES, Ellerson, Va.; Gresham's Nursery, and Willa L. Glasgow staged exhibits at a chrysanthemum show held October 25, at Richmond, Va. Shrub prizes were offered to the amateur exhibitors by Gresham's Nursery, and potted chrysanthemums were awarded by Wonderland Nurseries. The show was sponsored by the Virginia Federation of Garden Clubs, Piedmont district.

Insects and Diseases of Roses

By M. B. Cummings

Roses are the queen flowers of our gardens and nurseries. Great as is the joy of growing roses, it could be greatly enhanced if there were less trouble with insects and diseases. New species and varieties come to add zest to rosarians, but unfortunately, the old pests are with us still. One can hardly set foot in a nursery or garden where roses are grown for sale or for home enjoyment without seeing some pest or malady. This article is written to help in the problem of insect and disease control.

Rust on Stems and Leaves.

A disease known as rust sometimes is found on roses, affecting the stems and leaves. The rose leaf rust, shown in figures 1 and 2, is common on both cultivated and wild roses. The usual and variable manifestations of this disease are illustrated in two stages, one on the leaf and one on the stem. Figure 3 displays the spores, which are greatly magnified because they are of microscopic size. There are three spore forms. One of these, called cluster cup, forms in early summer. When swollen with moisture the spores become bright orange in color. The summer spores appear later and are also brightly colored. The winter spores appear last, or late in the season, and form round patches on the leaf, first brown, then black. These spores take the shape of a small powdery mass; they are long and divided into a number of cells and make a structure that is long and club-shaped, as illustrated in figure 3. Care should be taken to prevent this disease from wintering over on old leaves, particularly on those from diseased plants. The spring spreading of rust on leaves can be checked by sprays with Bordeaux mixture. Drench the leaves and stems.

On the stems of roses there are several types of rust, often referred to as canker. One of these types has spots which are reddish and circular and which appear on young stems. Spots of this type later turn white. These eventually form amber-colored cankers the following spring, and there are purplish spots on the leaves. Pruning out all affected parts controls this malady. Another type, known as brand canker, is most prevalent on smaller roses. These have brown cankers with reddish to purplish edges which appear on the stem. Often the bark cracks, and the stems may be girdled. Fine sulphur

dust applied in summer, or dormant lime before growth starts in spring, will control this disease. Crown canker displays purplish or reddish-brown spots, with long cracks in the bark. Sanitation—the destruction of diseased plants and the use of new soil—is the control measure.

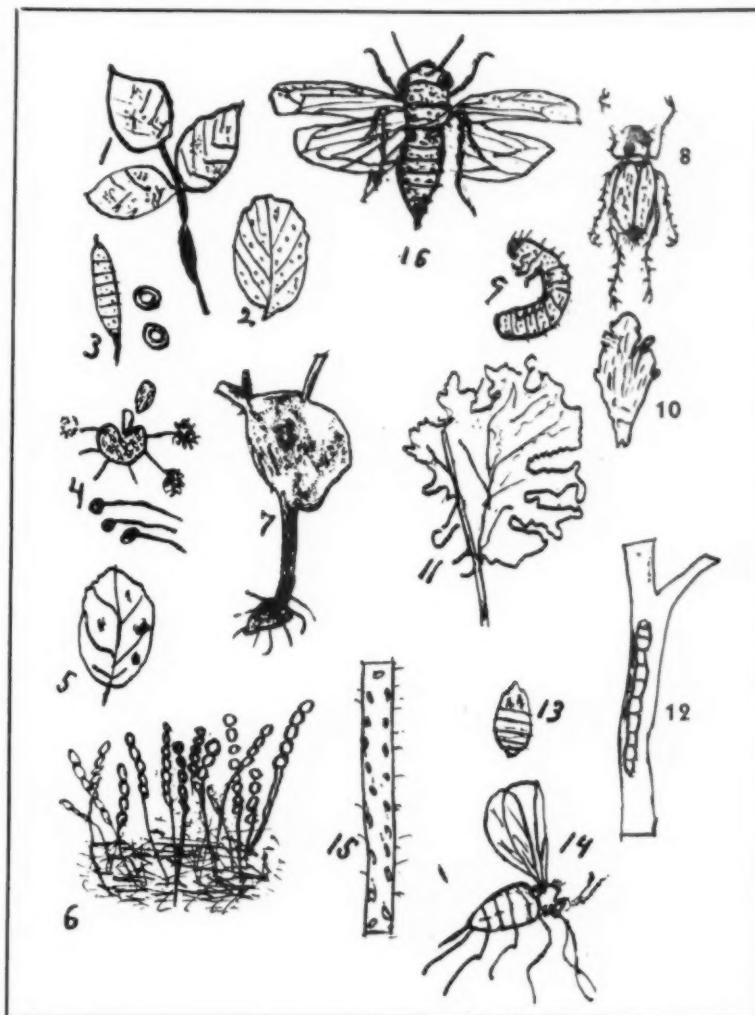
Crown Gall.

Crown gall appears on the crown of the plant, near the surface soil. Large dark outgrowth comes on the stem or rot, as displayed in figure 7. With trouble of this sort, the plants are dwarfed and do not flower well.

They may be pauperized. There is no control except sanitation—the destruction of affected parts and the use of fresh, gall-free soil.

Mildew on Leaves.

Mildew, the fine cobweb-like growth of a white fungus, is common and widespread. The fuzzy growth occurs most abundantly on the top surfaces of leaves and is quite abundant in wet seasons. Roses and grapevines are conspicuous sufferers from powdery mildew. The fungus is white, but the winter spores are black, as seen late in the season, and



Legends to diagrams: Figure 1, rust on leaf and twig of rose; 2, summer rust as small dots; 3, two kinds of rust spores; 4, spore sack and germinating spores of mildew; 5, mildew on leaf in summer; 6, mildew fungus much enlarged to show how summer spores are formed on minute stalks; 7, gall on root 8, rose bug, and 9, its grub, and 10, its pupa; 11, leaf of grape much damaged by rose bug; 12, borer in rose stalk; 13, pupa of midge; 14, rose midge adult has but two wings; 15, rust on stem of rose; 16, rose leaf hopper in adult stage.

show as mere black dots, as in figure 5, over the surface of the foliage. Practically the whole fungus is on the exterior, the entire body of it being superficial. The summer spores, illustrated in figure 6, show how the vertical stalks of the mildew start from new spores at the tip of the erect stalk and how they are pinched off to spread the mildew to new places. Control is secured by spraying or dusting with Bordeaux or fine sulphur and the destruction of affected leaves in the fall.

Black Spot.

On the rose leaves there may be black spots and patches with irregular margins on the upper surfaces. Control consists of cleaning up affected and fallen leaves. One should dust the plants with special, fine dusting sulphur powder. It is important to watch for incipient cases and deal with them at once.

Leaf Hoppers.

Leaf hoppers, creatures that, when disturbed, hop from the plant with the aid of strong hind legs, are properly named. They jump and hop, sometimes in groups, and there is no mistaking their identity. The leaf hoppers of the rose, shown in figure 16, feed on the lower and older leaves, causing discoloration in spots that are nearly white, but very small; sometimes there are curling of leaves and defoliation. The species of hopper on the rose hibernates in the egg stage in little slits in the bark. There are only two broods in a season. In the nursery a thorough spraying in midsummer will kill many of them. If Bordeaux is used for other things, it will also be beneficial in hopper control, through its repellent action.

Rose Bugs.

Rose bugs are readily recognized by their long, clinging clawlike legs and their relatively hard beetlelike back. There are numerous claws, which split at the tips, along the legs. The rose bug beetle, shown in figure 8, is a persistent and resistant creature. It feeds voraciously, tearing and skeletonizing the leaf it attacks. The foliage of roses and grapes is its preferred host. The grub of rose bug, shown in figure 9, feeds upon roots, and the pupa, figure 10, lives in the surface soil over the winter, but is susceptible to much injury and mortality when raked up and exposed to sun and variable weather. Working the soil under roses in early spring helps to kill many of the creatures. A strong spray of arsenate of lead or rotenone is required to kill the adult beetle; one may nearly double the

usual amount for a large killing. Molasses or sugar added, a teacupful to the gallon, makes the poison more attractive.

Midge.

Roses are often attacked by the midge, a small, two-winged insect, shown in figure 14, with slender legs about as long as the body. It is hard to see, as it is nearly transparent and flies rapidly. There are two periods during which the midge problem is serious, one during June, the usual rose flowering period, and the other in autumn, the blooming season of the hybrid tea roses. The leaves, buds and young tender branches are attacked so that the upper ends become deformed, turn brown or black and die. When flower buds are attacked they do not open well. Many little maggots—the worm stage—may be found in the buds. They are about one-twelfth of an inch long, white or orange-colored. There are several broods in a season. The midge winters over as a pupa in the soil.

In control one should remove all trash, including fallen leaves, and cover the ground with tobacco dust. A mist spray of nicotine, one to ten dilution, is effective.

Stem Borer.

A small white borer, shown in figure 12, sometimes eats out the middle portion and some of the live wood in the stems of roses. The symptoms of borer damage are lack of vigor and occasional wilting of the cane. An incision in the suspected cane will generally reveal the presence of the creature, which can be sliced.

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No. 1, 3/16 to 1/4-inch, branched.....	2.90	25.00
No. 1, 3/16 to 1/4-inch, straight.....	2.90	25.00
No. 2, 2/16 to 3/16-inch, branched.....	2.10	18.00
No. 2, 2/16 to 3/16-inch, straight.....	2.10	18.00
No. 3, about 2/16-inch.....	1.40	12.00

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6 to 8 ft.....	35.00	300.00
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2 to 3 ft.....	15.00	125.00
3 to 4 ft.....	22.50	200.00
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	to	and	
	100	250	
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Fredonia (Early Black), Niagara (White), Catawba (Red), 2-1...	.12	.11	.10½
1-1...	.09	.08	.07½
Delaware (Red), 2-1...	.14	.13	.12½
Delaware (Red), 1-1...	.11	.10	.09½
Caco (Red), 2-1...	.16	.15	.14½
Caco (Red), 1-1...	.12	.11	.10½

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	25 to	100 to	
	100	250	
Wilder, heavy, 3-yr...	\$0.20	\$0.19	
Wilder, 2-1...	.15	.14	
Wilder, 1-1...	.11	.10	

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Ask for prices on quantity lots.

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	100	250	1000	
Paradise and Washington				
3-yr., heavy...	\$4.00	\$3.50	\$30.00	
2-yr...	2.80	2.30	18.00	
1-yr...	2.20	1.70	12.00	

HORSE-RADISH

	25 to	100 to	250 to	
	100	250	1000	
Cuttings...				
Whole Roots...	\$0.02	\$1.75	\$15.00	
	.04½	4.00	35.00	

Plant Notes Here and There

By C. W. Wood

As I look back over the years during which I have been interested in horticulture, I am struck by the preference shown by gardeners and florists for red pyrethrums over those of any other color. If you have not confirmed that observation in your own experience, go over the matter now and see if it is not correct. Remember, if you will, the old James Kelway and Langport Scarlet, both of value today, especially as they come quite true from seeds. Where they can be grown with any degree of satisfaction, the double-flowered reds, such as Buckeye, are valuable. The plants that prompted this note are, however, two new single varieties, Scarlet Glow and Crimson Giant.

Scarlet Glow will, I believe, make a name for itself among gardeners who are not afraid of bright colors and among users of cut flowers, including commercial users. The flowers are large (to four inches across), the stems are long (to four feet or more under good culture) and the plant is both hardy and vigorous. I cannot speak of Crimson Giant from experience, but a friend who has watched it in its introducer's nursery, in Connecticut, tells me it is the outstanding crimson pyrethrum of his acquaintance. His report tells me that it is larger and perhaps more vigorous than Scarlet Glow and that it blooms a week or more earlier. Its earlier blooming is of less consequence to the gardener than to the grower of cut flowers, in whose case the matter of a week may mean the difference between profit and loss. If you grow cut flowers, you can scarcely afford to overlook these two new red pyrethrums.

Lithospermum Oleifolium.

If growers in the more temperate parts of the United States want to do their pocketbooks, as well as their customers' gardens, a good turn, they will commence right now to investigate the tiny little Spanish gromwell, *Lithospermum oleifolium*. It is not easy to understand how such a lovely little subshrub has been so long overlooked in this country. I do not find it listed at all, although it has found its way into gardens, because I have had it on two occasions, at least, from friends. And it is not easy to understand how so tiny a plant (it did not reach over two inches tall here in northern Michigan) can bloom

from June to October without using all its substance in the process. Coupled with its long blooming season is its added charm of being easy to grow. It requires little more than ordinary rock garden treatment. Its flowers are typically boraginaceae, the family to which it belongs. In this case the color is an entrancing pink, shading to light blue.

Unfortunately, this little lithospermum did not prove hardy in this garden on the two occasions it was here, although I suspect that it could even stand the winters here if it could be given a protected spot, and I should expect it to be entirely hardy from latitude 40 southward. I can say nothing definite about its propagation, except that it can be grown from seeds, acting in the erratic manner common to most lithospermums. If it behaves like other shrubby lithospermums, it can also be grown from stem cuttings and perhaps from root cuttings, although the latter are usually thought of in connection with the herbaceous kinds.

Ruellia.

Not many of the ruellias have wandered out of the tropics and subtropics; so there are few of interest to growers of hardy plants. Indeed, there seem to be none of much interest, if their absence from nurseries

is a basis for judgment. I just went over my catalog file and found two, of the hundred or more, that listed one kind, *Ruellia ciliosa*. This showed good judgment, I believe, because that species is the best of the hardy kinds that I know. A native of the eastern states from Pennsylvania southward and westward to Texas, *R. ciliosa* has been known to gardeners for a long time; yet today it remains an unusual plant in the horticultural world. Its worst fault, as I have had pointed out to me on several occasions by gardeners to whom it was recommended, is a rusty appearance in the latter part of its season. But its behavior before that time more than compensates for that fault, it seems to me. That behavior includes a disposition which smiles in the face of adversity (it only wants a sunny, well drained situation) and a blooming period that covers the summer, from July until late September, here. During that time it produces a succession of long-tubed lavender flowers, in which some profess to see a close resemblance to a petunia flower. All of which means a good garden plant, in my opinion. *Ruellia* may be grown from seeds, preferably sown outdoors in autumn or during the winter, and old clumps may be divided in spring before they are in active growth. The plant has been

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Sedum Hybridum.

While visiting nurseries since the war's end, I have kept my eyes open for sedums and have found them quite rare in neighborhood nurseries. That is not in the best interest of horticulture, in my opinion, and certainly not in the best interest of plant sales, for one can sell a good stonecrop, when nothing else will do. There would be little virtue in littering one's place with all the sedum riffraff, of course, but a wise choice of a few kinds would surely do everybody some good. *S. hybridum* would be numbered among the good kinds by most observers. Though it has been known for nearly two centuries, having been named and described by Linnaeus in 1753, it is still rather uncommon in gardens, in spite of the fact that it is one of the most ornamental of the aizoons. Unlike most of the group, *S. hybridum* is evergreen, which adds to its value as a garden plant, especially as a winter ornament. Its creeping stems (not rampageously creeping, however) are clothed in alternate leaves, generally spatulate, which assume brilliant winter colors, making another point in the plant's favor. It usually has two flowering periods, one in late spring and the other in late summer, when bright yellow flowers appear in umbellate cymes. Unfortunately, *S. hybridum* is often misnamed in nurseries and gardens, appearing under such names as *S. kamtchaticum*, *S. middendorffianum*, *S. floriferum* and otherwise. But it may be identified from all these by its creeping habit, and from the ones named except *S. floriferum*, which is rare in commerce, by its linear sepals.

Bear's-Breeches.

Bear's-breeches, which are the acanthuses of the botanists, furnish gardens in fairly temperate climates with some of the most interesting of spectacular material in the entire range of herbaceous plants. Probably the best kind for spectacular effects is *Acanthus mollis*, in its variety *latifolius*, if it is to be found, or the type, if *latifolius* cannot be located. Unfortunately, *latifolius* seems to be quite rare in this country, a fact which may discourage many growers. But now that normal trade relations are becoming established with Europe, one should have little trouble locating seeds of the type.

The real beauty of bear's-breeches is found in their foliage, which in *A. Mollis* is most striking, each radical leaf being as much as two feet long,

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320 <i>Honeysuckle Bella Albida</i> , 6 to 12 ins.	.4c
225 <i>Honeysuckle</i> , Morrow's, hc, 12 to 18 ins.	.5c
300 <i>Honeysuckle</i> , Morrow's, 6 to 12 ins.	.4c
100 <i>Japanese Quince</i> , <i>Dwarf</i> , s, 6 to 8 ins.	.6c
300 <i>Japanese Quince</i> , <i>Dwarf</i> , 4 to 6 ins.	.5c
1450 <i>Privet</i> , <i>Ibota</i> , 2sx, 4 to 8 ins. and up.	4½c
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(True from cuttings. Very heavily rooted, stock plants.)	
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560 <i>Spiraea Froebeli</i> , 4 to 8 ins.	.4c
375 <i>Spiraea Billiardi</i> , 12 to 18 ins.	.5c
65 <i>Spiraea Billiardi</i> , 6 to 12 ins.	.4c
8000 <i>Barberry Thunbergi</i> , s, 2 to 4 ins.	.1c

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6 to 12 ins., 2 canes or more.	\$0.65	\$ 5.00	\$ 40.00
12 to 18 ins., 3 canes or more.	.75	6.00	50.00
18 to 24 ins., 3 canes or more.	.85	7.00	60.00
2 to 3 ft., 4 canes or more.	1.10	9.00	80.00
3 to 4 ft., 5 canes or more.	1.50	13.00	120.00
4 to 5 ft., 6 canes or more.	2.25	21.00	200.00

IBOLIUM PRIVET (*Ligustrum ibolium*)

	10	100	1000
6 to 12 ins., 2 canes or more.	.75	6.00	50.00
12 to 18 ins., 3 canes or more.	.85	7.00	60.00
18 to 24 ins., 3 canes or more.	1.00	8.00	70.00
2 to 3 ft., 4 canes or more.	1.25	10.00	90.00

AMUR RIVER NORTH PRIVET (*Ligustrum amurense*)

	10	100	1000
12 to 18 ins., 3 canes or more.	1.00	8.00	70.00
1 1/2 to 2 ft., 3 canes or more.	1.25	10.00	90.00
2 to 3 ft., 4 canes or more.	1.50	13.00	120.00

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half that broad and deeply pinnated. In deep, rich soil, the type will grow three or four feet tall, while the variety *latifolius* should surpass that stature by a foot or two. Both are spectacular plants.

No such growth can be expected, however, unless the soil is rich and the moisture supply constant during the growing season. In addition to the foregoing, bear's-breeches need full sun, good drainage and a sheltered position. Shelter is required in this section for protection from

the cold in winter, and even then the plants require a deep mulch through the winter months if one expects them to survive low temperatures. I have no idea how much cold they can stand, because there is little in the literature upon which to base an opinion, and this is the only section of the country with which I am familiar as far as *acanthus* culture is concerned. They are rather uncertain in this wind-swept garden, but are generally safe in protected gardens under a heavy mulch. I found

that variety *latifolius* would come through winters to which the type succumbed. Bear's-breeches come readily from seeds, the ones mentioned having hooded pink flowers in long spikes during the summer.

Petalostemon.

The prairie clovers, numbering twenty-five or more kinds, are all American. They are interesting subjects for the plant student, and all that I have grown have quite a bit of value to gardens. Why they are

not more often used by gardeners is not easy to understand, unless it is because nurserymen seldom offer them. It may be, however, that gardeners have had trouble moving the plants and have spread the bad news. It is true, as is the case with many legumes with fleshy roots, that prairie clovers are not moved easily while they are in bloom, and that is the time most gardeners select their new plants, thinking that their green fingers will work miracles where adepts utterly fail. Like many legumes, the prairie clovers with which I am familiar have long, thick roots, which are not easy to dig intact, and losses are therefore to be expected if they are moved in a vegetative state. Even large plants may, however, be moved safely while dormant.

All the kinds that I have grown demand little in the way of moisture, most of them being inured to hardships of that nature and to cold in their prairie and plains homes, and they can generally subsist on a quite meager diet. Their finely cut leaves and interesting flowering habits, rather showy in most cases, make them good border plants, although there are a number of low-growing kinds for the rock garden.

If one sees any prairie clovers at all, it is apt to be *Petalostemon purpureus* (*P. violaceum*), the commonest kind and also the dullest. It only deserves a place in lists and gardens if its betters cannot be found. It makes 2-foot plants of usually glabrous leaves, of three to five leaflets each, and bears purplish flowers from June to August. When white flowers are called for, *P. candidus* is ready to answer the need with its 2 to 4-inch spikes of pure white flowers during June and July. About the best of the genus that I have grown is *P. villosus*, a plant of sandy places from Wisconsin west to the mountains. Its specific name indicates its nature, its stems, its 13 to 17-parted leaves and even the cones of its soft rose flowers being covered with gray-green velvet in the form of soft hairs. And that characteristic will indicate to the experienced gardener that the plant will need good drainage. Experience tells us that drainage should be so perfect that no hint of standing water can mar the silky foliage. All kinds that I have grown are easily propagated by fall-sown seeds and are easily established if moved while dormant.

Goldthreads.

The root of a plant seldom has any special influence on a gardener's appraisal of its ornamental value and perhaps has none in the case of gold-threads. But their little threads of

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gold are sure to entwine themselves about the affection of every gardener who once allows them to enter his life. It is not their gold threads alone, however, that lay claim to our affections, for their lovely 3-parted leaves and little white saucers, usually solitary on a short scape, make an appealing combination.

These observations have particular reference to *Coptis trifolia*, the more or less familiar goldthread of northern United States, although it is not the only kind the gardener can enjoy. One or two other species are available at the cost of a little searching. In fact, our eastern species is probably not the best of the goldthreads; the westerner, *C. asplenifolia*, coming close to that honor. Like the first named, *C. asplenifolia* is evergreen, at least if given a light protection of boughs. Its leaves are so much cut that they suggest its specific name, which has reference to that genus of ferns. Instead of the single-flowered scapes of our eastern species, this one has much-branched flowering stems to support its numerous creamy-white flowers. That makes a more floriferous plant and, I believe, a better garden ornament.

The goldthreads are not plants for mass production, since their value is not readily apparent to the casual gardener and not at all to the lover of the gaudy. If one has a critical clientele, one that appraises plants on their subtle charms rather than on mere showiness and is ready to give special care to its plant material, goldthreads will find favor. They are found mostly in moist, shady places and, according to my experiences, in acid soil. They should be given similar treatment in the garden. They may be propagated by division in early spring, and care should be taken to see that they receive no setback until well established, or they may be grown from seeds as soon as ripe.

LOUISIANA NURSERY.

Appropriation of \$90,000 by the 1946 legislature of the state of Louisiana has been followed by purchase of eighty acres in Allen parish by the state forestry commission for the production of forest tree seedlings. This is expected to produce ten million seedlings annually, and another nursery is to be located in the northern part of the state for production of equal size. Planting stock is not expected to be offered before another year or two.

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Barberry Thunbergi , sdgns. 9 to 12 ins.	\$ 5.00	\$ 45.00	
6 to 9 ins.	4.00	35.00	
4 to 6 ins.	2.50	20.00	
Elm, American , sdgns. 18 to 24 ins.	1.80	16.00	
12 to 18 ins.	1.40	12.00	
6 to 12 ins.	.80	7.00	
Elm, Chinese , sdgns. 2 to 3 ft.	2.90	25.00	
18 to 24 ins.	2.10	18.00	
12 to 18 ins.	1.50	12.50	
6 to 12 ins.	.80	7.00	
Bush Cherry , sdgns., 2 to 4 ft., partly branched, well rooted	15.00		
2 to 3 ft.	12.50	100.00	
18 to 24 ins.	8.50	75.00	
12 to 18 ins.	6.50	50.00	
6 to 12 ins.	4.50	35.00	
Bush Cherry , branched sdgns., well rooted.	14.00	120.00	
2 to 3 ft.	10.00	85.00	
18 to 24 ins.	7.50	65.00	
Russian Mulberry , 18 to 24 ins.	2.60	22.00	
12 to 18 ins.	1.90	16.00	
6 to 12 ins.	1.20	10.00	
Russian Olive , 3 to 4 ft.	8.50	75.00	
2 to 3 ft.	6.00	50.00	
18 to 24 ins.	5.00	40.00	
Silver Maple , 2 to 3 ft.	3.50	30.00	
18 to 24 ins.	2.60	22.00	
12 to 18 ins.	1.80	15.00	
6 to 12 ins.	1.20	10.00	
Thornless Honey Locust , 4 to 5 ft.	7.50	70.00	
3 to 4 ft.	5.60	50.00	
2 to 3 ft.	3.50	30.00	
18 to 24 ins.	2.60	22.00	
12 to 18 ins.	1.80	15.00	
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Latham Raspberry , No. 1, trans.	5.00	45.00	
Paradise Asparagus , 2-yr.	2.40	20.00	
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American Arborvitae , 18 to 24 ins., TTT.	\$4.50	\$40.00	\$350.00
Savin Juniper , 15 to 18 ins., TTT.	6.00	50.00	450.00
Juniperus Virginiana , (Platte River), 4 to 6 ins., T	6.00	50.00	
2 to 4 ins., T.	4.00	30.00	
Spruce, Black Hills , 18 to 24 ins., TTT.	6.00	50.00	450.00
15 to 18 ins., TTT.	5.00	45.00	400.00
9 to 12 ins., T.	1.75	15.00	125.00
6 to 9 ins., T.	1.50	12.00	100.00
4 to 6 ins., T.	...	6.50	55.00
Spruce, Colorado Blue , 4 to 6 ins., T.	7.00	60.00	
Pinus Densiflora , 18 to 24 ins., T.	1.50	12.00	100.00
Pinus Banksiana , (Jack Pine), 2 to 3 ft., T.	1.60	14.00	130.00
18 to 24 ins., T.	1.40	12.00	100.00
Pinus Mugilus , bushy, 6 to 9 ins., TTT.	2.50	20.00	180.00
Pinus Ponderosa , 18 to 24 ins., T.	1.75	15.00	135.00
12 to 18 ins., T.	1.50	12.50	100.00
9 to 12 ins., T.	1.25	9.00	75.00
Scotch Pine , 2 to 3 ft., T.	2.00	17.00	150.00
18 to 24 ins., T.	1.75	15.00	135.00
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Coming Events

MEETING CALENDAR.

For the benefit of state association officers who wish to set the time of midwinter meetings with a minimum of conflict, the following list is given of convention dates already made known. Secretaries of other associations are invited to notify the editor of further meeting dates as soon as they are set.

December 2 and 3, Minnesota State Nurserymen's Association, Radisson hotel, Minneapolis.

December 4, Western Pennsylvania Nurserymen's Association, Webster Hall hotel, Pittsburgh.

December 4 and 5, Wisconsin Nurserymen's Association, Hotel Schroeder, Milwaukee.

January 7 and 8, Western Association of Nurserymen, Hotel Muehlebach, Kansas City, Mo.

January 8 to 10, Indiana Association of Nurserymen, Purdue University, La Fayette.

January 10 and 11, Iowa Nurserymen's Association, Hotel Kirkwood, Des Moines.

January 13, National Landscape Nurserymen's Association, Sherman hotel, Chicago, Ill.

January 13 to 15, Ohio State University short course for arborists and landscape gardeners, Neil House, Columbus, O.

January 14, All-American Rose Selections, Inc., membership meeting, Sherman hotel, Chicago, Ill.

January 14 to 16, Illinois Association of Nurserymen, Sherman hotel, Chicago.

January 16 and 17, Oklahoma State Nurserymen's Association, Huckles hotel, Oklahoma City.

January 17 and 18, New York State Nurserymen's Association, Rochester.

January 22, Connecticut Nurserymen's Association, Waverly Inn, Cheshire.

January 22, New Jersey Association of Nurserymen, War Memorial building, Trenton.

January 22, Ohio State University short course for nurserymen, Neil House, Columbus, O.

January 23 and 24, Ohio Nurserymen's Association, Neil House, Columbus.

January 29 to 31, Michigan Association of Nurserymen, Pantlind hotel, Grand Rapids.

February 4 to 6, New England Nurserymen's Association, Hotel Statler, Boston, Mass.

MINNESOTA PROGRAM.

Registration at 10 a. m., Monday, December 2, will open the 2-day convention of the Minnesota State Nurserymen's Association, to be held at the Radisson hotel, Minneapolis. A noon luncheon will be followed by reports of Paul Peters, president, and Harold Reid, treasurer, and the appointment of committees.

First speaker on the program will be Dr. O. B. Jessness, chief of the department of agricultural economics at the University of Minnesota, St. Paul, who will discuss future trends

in a talk entitled "What's Ahead?"

The financial structure of the state of Minnesota will be the subject of a talk by T. G. Driscoll, commissioner of administration. Dr. L. C. Chadwick, of the department of horticulture and forestry, Ohio State University, Columbus, will discuss "Fertilizers for the Nursery."

Vincent Bailey, Kimball Andrews and Leslie Mitchell are in charge of arrangements for the banquet, to be held Monday evening at 6:30. The meeting Tuesday morning will be for members only. Kenneth Law, chairman of delegates to the American Association of Nurserymen, will report on the convention held in July at Miami Beach, and Bj. Loss, member of the executive board of the A. A. N., will review A. A. N. activities. The speaker for the morning's session will be Prof. T. L. Aamodt, state entomologist, who will report on the past year's work.

Recent developments in two nursery fields of interest will be discussed by speakers following the noon luncheon meeting of A. A. N. members and the appointment of delegates to the national convention. Dr.

L. C. Chadwick will discuss "New Varieties for Landscape Planters," and Prof. W. H. Alderman, chief of the department of horticulture at the University of Minnesota, will talk on "New Fruits for Minnesota."

WISCONSIN PROGRAM.

The Wisconsin Nurserymen's Association will hold its thirtieth annual convention December 4 and 5 at the Hotel Schroeder, Milwaukee. The morning of the first day will be given over to association business, with a message from Edwin R. Eschrich, president, and the report of Thomas S. Pinney, secretary-treasurer. E. L. Chambers, state entomologist, will appear on the program at this session.

At the luncheon meeting the speaker will be Alex Klose, of the Milwaukee park board, on "Beautifying Milwaukee."

In the afternoon Dr. L. C. Chadwick, of Ohio State University, will speak on "Soils and Fertilization," and L. L. Kumlien, who last summer took over the Erickson Nursery and now operates it as the Kumlien Nursery at Janesville, will talk on a timely topic.

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1 to 2 ft.	7.00	60.00
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1 to 2 ft.	6.00	50.00
<i>Viburnum dentatum</i> ,		
1 to 2 ft.	6.00	50.00
<i>Viburnum lentago</i> , 1 to 2 ft.	6.00	50.00
<i>Tsuga canadensis</i> ,		
4 to 8-in. sdgs.	4.00	30.00
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1 1/2 to 2-in. cal. (in the ground), \$1.50 each, plus 25¢ dug bare root. 1 1/2 to 2-in. cal. (in the ground), \$2.00 each, plus 25¢ dug bare root. 1 1/2 to 2-in. cal. (in the ground), \$2.25 each, plus 40¢ dug bare root.

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Ambrosia Late, Big Joe, Gandy, Klondike, Massey, Maytime, Parsons Beauty, Robinson, Suwannee, Southland, Temple	40	1.25	2.25	8.00
Catskill, Chesapeake, Dorsett, Fairfax, Fairpeak, Midland, Premier, Redstar, Starbright	45	1.40	2.50	9.00

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At the morning session December 6, Anthony Wuchterl, Milwaukee, will tell the members about "Old Landmarks."

In the afternoon, Chester Fletcher, of Milwaukee, will speak on the co-operative movement, with which he has had long experience. George Nigard, of Herbster, and probably another member of the association will be the concluding speakers.

James Ilgenfritz, Monroe, Mich., regional executive committeeman of the American Association of Nurserymen, will be present and address the state organization.

ILLINOIS PLANS UNDER WAY.

Although not yet completed, program plans for the convention of the Illinois State Nurserymen's Association, to be held January 14 to 16, at the Sherman hotel, Chicago, include a variety of speakers who should prove of interest to all nurserymen. Meetings will be held in the Louis XVI room, on the first floor of



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the hotel, with registration headquarters and the nurserymen's special lounge in the adjoining assembly room. Three afternoon sessions and an executive session Thursday morning are scheduled, and the sessions Wednesday and Thursday, January 15 and 16, will be preceded by luncheon.

Richard P. White, executive secretary of the American Association of Nurserymen, will discuss current activities of the national association as the first speaker of the opening session, at 2 p. m., Tuesday, January 14. The federal barberry eradication project, with particular emphasis on the methods of testing barberry varieties to determine whether or not they are carriers of the black stem rust of wheat, will be discussed by R. O. Bulger, senior pathologist in charge of plant disease control, United States Department of Agriculture.

Nurserymen interested in the allied florists' field will enjoy a talk by Robert Roland, executive secretary of the Society of American Florists, who will tell about the annual national flower show sponsored by the society, to be held at Chicago in March.

The speaker at the first of the luncheon sessions, Wednesday, January 15, will be Arnold P. Benson, director of the Illinois state department of agriculture. That afternoon Dr. L. R. Tehon, acting director of the Illinois Natural History Survey, will speak on plant zones in Illinois, with particular reference to local variations in the state from the broad, sweeping lines of the plant zones shown in "Rehder's Manual of Cultivated Trees and Shrubs." Dr. M. J. Dorsey, head of the department of horticulture at the University of Illinois, will discuss two topics, the experimental work at the university with ornamental plants and the new sod grasses and the work of the joint committee of the department of horticulture and the Illinois State Nurserymen's Association on the development of a recommended list of landscape materials for the various sections of the state.

W. R. Leslie, superintendent of the Dominion experimental station, Morden, Man., Canada, will illustrate with Kodachrome slides his address on new varieties of ornamental and fruit plants developed at the station.

Thursday morning's meeting will be an executive session devoted to the regular business of the convention, including committee reports and the election of officers. H. A. Lyon, of the board of commerce of

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Shrubs and Trees,
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Broadway Station,
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1000	Moupinensis
800	Racemiflora
700	Simoni
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East Malling Stocks

Rosebushes and Herbaceous plants

Buy from a firm specializing in
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Ask for quotations on items you
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Experienced Exporters of Nursery

Stock since 1914.

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	Per 100
200 Carolinus Poplar , 3 to 5 ft.	\$5.00
250 Lombardy Poplar , 3 to 5 ft.	5.00
150 Salix Caprea , 2 to 3 ft.	6.00
100 Salix Caprea , 3 to 4 ft.	7.00
150 Salix Pendulans , 2 to 3 ft.	6.00
50 Salix Pendulans , 3 to 4 ft.	6.00
100 Salix Vitellina , 2 to 3 ft.	6.00
150 Ibolidum Privet , 12 to 18 ins.	4.50
5000 Ibota Privet , 12 to 18 ins.	4.50
900 Forsythia Intermedia , 18 to 24 ins.	5.00
1400 Forsythia Inter. Spec. , 18 to 24 ins.	5.00
600 Forsythia Fortunei , 18 to 24 ins.	5.00
1100 Lonicera Bella Albita , 18 to 24 ins.	5.50
600 Lonicera Tanakana , 18 to 24 ins.	5.50
700 Lonicera Grand. Rosea , 18 to 24 ins.	5.50
100 Sambucus Aurea , 18 to 24 ins.	5.50
300 Symplocarpus Racemosus , 12 to 18 ins.	4.00
50 Symplocarpus Vulgaris , 12 to 18 ins.	3.50
100 Ampelopsis Engelmanni , 1-yr.	4.00
800 Ampelopsis Quinquefolia , 1-yr.	4.00
400 Ampelopsis Heterophylla , 1-yr.	5.00
1200 Berberis Thunbergi , 6 to 9 ins.	5.00
550 Barberry, Korean , 6 to 8 ins.	4.00
200 Caragana Arborescens , 4 to 6 ins.	4.00
3250 Celastrus Orbiculatus	5.00
150 Celastrus scandens	5.00
4200 Cydonia Japonica , 12 to 18 ins.	3.00
700 Rosa Rugosa , 3 to 6 ins.	3.00

Per 1000

Berberis Thunbergi, 3 to 6 ins. \$12.00
Berberis Thunbergi, 6 to 9 ins. 20.00
Berberis Thunbergi, 9 to 12 ins. 30.00

ADAMS NURSERY, INC.

Westfield, Mass.

SHADE TREES

We offer the following list of specimen trees at greatly reduced prices since they are on rented property and have to be moved by Jan. 1, 1947.

	The	Each	Lot
50 Silver Maples , 1 1/2 to 2-in. cal.	\$1.75	\$ 96.25	
100 Silver Maples , 2 to 2 1/2-in. cal.	2.25	225.00	
103 Silver Maples , 2 1/2 to 3-in. cal.	3.00	309.00	
70 Silver Maples , 3 to 4-in. cal.	5.00	350.00	
85 American Ash , 1 1/2 to 2-in. cal.	2.00	170.00	
65 American Ash , 2 to 2 1/2-in. cal.	3.50	227.50	

Terms: 50 per cent cash with order; balance after inspection.

All trees dug bare root.

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Shade Tree Whips . . . a timely finished product saving 2 to 4 yrs. growing effort . . . excellent variety.

A very complete line of
**ORNAMENTAL TREES, SHRUBS
AND EVERGREEN SHRUBS**,
 including many scarce items.

THOMAS B. MEEHAN CO.
 DRESHER, PA.

**LINING-OUT EVERGREENS
and AZALEAS**
 Sturdy Plants.

DUNLAP NURSERIES
 Knoxville 16, Tenn.

Detroit, Mich., will be the speaker at the luncheon meeting.

Exhibits will include the prize-winners in the contest for designs of plantings for small residential properties sponsored by the National Landscape Nurserymen's Association and the American Nurseryman. The landscape group will meet for discussion, January 13, preceding the Illinois convention.

NEW JERSEY PROGRAM.

A citation will be awarded to Dr. R. P. White, executive secretary of the American Association of Nurserymen, at the convention of the New Jersey Association of Nurserymen, to be held Wednesday, January 22, at the War Memorial building, Trenton. The presentation is to be made by Col. E. Phillips, of Andover, New Jersey, following Dr. White's address on "Trends in the Nursery Business."

Also on the program for the morning session, at which George White, association president, will preside, will be a progress report by Prof. R. B. Farnham, of the department of horticulture at Rutgers University, New Brunswick, on the 4-H Club grounds improvement program.

Kurt Meyer, the association's first vice-president, will preside at the afternoon session, following a luncheon in the reception room of the Stacy Trent hotel. "Wartime Experiences with the OSS" will be related by Mario H. Volpe, district court judge, of Trenton, as the opening feature of the afternoon program. F. Nason Manley, director of construction, Johnson & Johnson, New Brunswick, will tell of his experiences in landscaping industrial sites, and J. K. Horner, dean of the faculty, Babson Institute of Business Administration, Babson Park, Mass., will discuss "Outlines of the Economic Pattern."

NEW JERSEY SHADE TREE COMMISSIONERS TO MEET.

The twenty-first annual meeting of the New Jersey Federation of Shade Tree Commissions will be held December 4, at the Hotel Essex House, Newark. William McIntyre, Morristown, president, will give the opening address, and Dr. P. P. Pirone, New Brunswick, will be the moderator for the morning session.

Ralph Kaufmann, director of the training program for the Asplundh Tree Expert Co., will talk on the training of a tree climber and lead a discussion of modern shade tree equipment. Dr. Stanley Bromley, of

HOLLAND - IMPORTED STOCK

Prices are per 100 for early spring 1947.

	Per 100
Aucuba Variegata Gold Dust	\$ 30.00
8 to 10 ins.	\$ 30.00
12 to 15 ins.	60.00

	Per 100
Azalea Mollis and Pontica Named Hybrids	125.00
Well budded, 12 to 15 ins.	150.00

When in bloom these Azaleas sell like the proverbial hot cake. They transplant well and are hardy.

	Per 100
Evergreen Barberry , 10 varieties, 2-yr.	22.00
Red-leaved Barberry, 8 to 12 ins.	18.00

\$150.00 per 1000

	Per 100
Cotoneaster , several varieties, 2-yr.	17.50
Crataegus, Double White and Paul's Scarlet , 1-yr. grafts	30.00

Scarlet, 1-yr. grafts

	Per 100
Holly, English, Golden and Silver	40.00
Variegated, 1 1/2 to 2 ft.	193.00

Kalmia, Laevigata, 6 to 8 ins.

	Per 100
Kalmia, Laevigata, 6 to 8 ins.	40.00
Laburnum Vossii, 1-yr., 12 to 18 ins.	30.00

3 to 4 ft., bushy

	Per 100
Laburnum Vulgare, 1-yr. sdgs.	\$45.00
Leucothoe Catesbeiana, 6 to 10-in. liners	20.00

Magnolia, young plants from layers,

	Per 100
10 to 12 ins.	80.00
15 to 18 ins.	125.00

18 to 24 ins.

	Per 100
Leucothoe Catesbeiana, 6 to 10-in. liners	15.00

SPECIAL OFFER. Subject to prior sale, good to December 25. **Magnolia**, in lots of 500 or more, the following varieties: 60% **Soulangeana**; 20% **Soulangeana Nigra**; 10% **Alexandrina**, rose-purple; 10% **Amabilis**, white.

	Per 1000
15 to 18 ins.	80.00
18 to 22 ins.	120.00

1-yr. grafts grown here are priced at \$1.00 each.

	Per 100
Philadelphia Glacier and Virginialis	15.00

Hybrid Rhododendron, Named Varieties. These came through last spring and grew well for me.

	Per 100
1-yr. grafts	50.00
3 to 4 tr. 10 to 11 ins.	100.00

Well budded, 15 to 18 ins.

	Per 100
18 to 24 ins.	150.00

Rhododendron Ponticum, understock

for grafting, \$120.00 per 1000.

	Per 100
Viburnum Carlesii, 1-yr. grafts	50.00
12 to 15 ins. bushes	100.00

Viburnum Opulus, 2 to 3 ft.

	Per 100
Viburnum Plicatum, 2-yr. tr.	25.00
Viburnum Tomentosum, 1-yr.	19.00

2 to 3 ft.

	Per 100
Aristolochia Siphon, 2-yr. liners	45.00
YOUNG EVERGREENS	20.00

Bare root for lining out.

	Per 100
Chamaecyparis Triplum van Boskoop	45.00
8 to 10 ins.	65.00

Chamaecyparis Obtusa Nana, 1-yr.

	Per 100
6 to 8 ins.	27.50
Juniperus Pfitzeriana, 8 to 10 ins.	50.00

Taxus, Irish, 8 to 10 ins.

	Per 100
12 to 15 ins.	70.00
Taxus, English, 8 to 12 ins.	35.00

12 to 15 ins.

	Per 100
Thuya Pyramidalis, 8 to 12 ins.	30.00
12 to 15 ins.	37.50

16 to 18 ins.

Prices include freight, duty, insurance and all import expense. Shipped direct to you from U.S.D.A. Plant Bureau at Hoboken, which adjoins the docks. Packing at cost.

Case lots only. Cases, 28 ins. x 28 ins. x 4 ft., cost \$8.00; 5 ft., \$9.00; 6 ft., \$10.00.

Send list of any other stock you want for prices. Terms: Half cash to everyone.

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Evergreens and Lining-out Stock

TSUGA CAROLINIANA

Carolina Hemlock, for Lining Out

Branched trees, excellent roots, 8 to 12 ins., \$65.00 per 1000. Packing included.

Orders booked for fall delivery in 1946 lots only.

THE SCKIPANO NURSERY CO.,

Warren, Pa.

the Bartlett Tree Expert Co., will give "Observations on Shade Tree Insects and Control Procedure During 1946," and Dr. Pirone will discuss "Shade Tree Diseases of Current Interest."

The speaker for the luncheon session is Dr. William H. Martin, dean of the college of agriculture at Rutgers University.

Edgar Rex, of the New Jersey department of agriculture, will be moderator for the afternoon session, which will be opened with a demonstration of mist blower sprayers at Lincoln park. After returning to the hotel, the group will hear a discussion of the principles, mechanics, operation and adaptability of the mist blower sprayer, by S. F. Potts, assistant entomologist at the United States Department of Agriculture field laboratory, New Haven, Conn.

Dr. D. E. Parker and Dr. B. H. Wilford, entomologists, U. S. D. A., will give a summary of the 1946 experiments for the control of elm bark beetle and elm leaf defoliators with DDT. The present status of the Dutch elm disease in New Jersey, with recommendations for 1947 control, will be discussed by Mr. Rex.

Henry Skinner, curator of Morris Arboretum, Chestnut Hill, Pa., will speak at the annual banquet, at 6:30 p. m.

ROSE GROUP TO MEET.

W. Ray Hastings, Harrisburg, Pa., secretary of All-America Rose Selections, Inc., announces that there will be a membership meeting of the organization coinciding with the Illinois State Nurserymen's Association convention, to be held January 14 to 16 at the Sherman hotel, Chicago, Ill. The rose group will meet Tuesday, January 14, at 9 a. m., at the hotel.

TENNESSEE HORTICULTURAL SOCIETY PLANS PROGRAM.

At the annual convention of the Tennessee State Horticultural Society, December 17 and 18, at Hotel Hermitage, Nashville, topics to be discussed by the numerous speakers range from labor problems to the control of insects and diseases of plants. They will cover all aspects of the production of fruits, nuts and vegetables. Dr. G. M. Bentley, state entomologist, Knoxville, is secretary-treasurer.

W. W. Magill, field agent in horticulture, University of Kentucky, Lexington, will be toastmaster for the annual dinner, which will be held at 6:30 p. m. at the Hotel Hermitage. The after-dinner speaker will be Dr. A. S. Colby, chief in small fruit cul-

ture, University of Illinois, Urbana, who will discuss "Some of the Things We Don't Know about Nut Growing."

SYMPOSIUM ON RESTORING COLONIAL WILLIAMSBURG.

The story of how gardens of two centuries ago were recreated as a part of the restoration of Williamsburg, Va., to its eighteenth century appearance will be unfolded during a Colonial Williamsburg flower and garden symposium to be held in the historic city January 20 through February 1.

The symposium, the first in what may become an annual series of such events, will disclose the behind-the-scenes work that has produced at Williamsburg some of the most beautiful and authentic examples of colonial gardening. It will be presented under the auspices of Colonial Williamsburg, the nonprofit educational corporation that administers and carries forward John D. Rockefeller, Jr.'s, restoration of the city.

Experts in the fields of landscape architecture, floriculture, flower arrangement and allied subjects will give lectures and lead discussion pe-

AMERICAN NURSERYMAN

riods; extensive displays of eighteenth century gardening implements, floral arrangements and old books and prints will be exhibited, and special guided tours will be conducted through many of the reconstructed gardens of the city.

The 1947 symposium will be divided into two separate sections in order that a greater number of persons may participate. The initial section will be held from January 20 through January 25, and the second section, which will repeat the entire scope and content of the first, will be held January 27 through February 1. Registration in each section has been limited to 100.

Arthur A. Shurcliff, Boston landscape architect, who directed the reconstruction of many of the Williamsburg gardens, will give a lecture on "How the Gardens of Colonial Williamsburg Were Restored."

"Eighteenth Century Virginia Gar-

CAMELLIAS, AZALEAS and GARDENIAS

Wholesale quantities, lots.

AZALEAS, standard varieties such as Fisher's Pink, Pride of Mobile, Pride of Dorking, Elegans: Each Bare roots 4-in. pots

6 to 10 inches \$0.30 \$0.50
10 to 15 inches50 .75

CAMELLIAS (Japanicas), such as Chandeli, Elegans, Monarch, Cameo Pink, Pink Perfection:

10 to 18 inches90 1.25
18 to 24 inches 1.25 1.60

RARE CAMELLIAS, such as Debutante, Purple Dawn, Gigantea, Kumasaka variegated:

8 to 12 inches 1.50 2.00
12 to 18 inches 2.25 2.75

EXTREMELY RARE, Magnoliaeflora, Lindsay Neill:

8 to 12 inches 4.75 5.50
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GARDENIAS, Hadley's improved: 10 to 18 inches50 .75

Check with orders.

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For immediate shipment.

Per 100
6 to 7 inches \$14.00
5 to 6 inches 10.00
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American Holly.		
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Mountain Laurel.		
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RHODODENDRON MAXI-		
MUM. Rose Bay		
Rhododendron.		
2 to 4 inches.....	4.00	30.00
4 to 6 inches.....	6.00	50.00
TSUGA CANADENSIS.		
Hemlock.		
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6 to 9 inches.....	3.00	20.00

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Send for your copy.

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WONDERLAND NURSERIES
Ellerson, Va.

dens" will be discussed by Alden Hopkins, resident landscape architect of Colonial Williamsburg. The lecture will be illustrated with slides and photographs. He will also speak on "Williamsburg Garden Designs."

Other talks scheduled during the symposium include "Unusual and Neglected Eighteenth Century Plant Materials" and "Maintenance of a Colonial Garden," by J. B. Brouwers, landscape superintendent of Colonial Williamsburg; "Plant Diseases and Insects of Williamsburg," by Alden Eaton, assistant landscape superintendent; and "The Relationship of the Gardens to Williamsburg Architecture," by A. Edwin Kendrew, resident architect.

The more important of the fifty-odd colonial gardens that have been restored in the city will be visited during the symposium in guided tours conducted to show how research in garden design and archaeological studies on the ground have determined the individual layouts of restored Williamsburg gardens.

TEXAS ROSE GROWERS ADDRESS DALLAS CLUB.

Representatives of the Texas rose industry spoke at a luncheon meeting of the Dallas Agricultural Club, at the Hotel Jefferson, Dallas, November 18. Homer Eikner, president of East Texas Rose Growers' Association, and Clark Kidd, president of Texas Rose Research Foundation, Inc., introduced Dr. Eldon W. Lyle, plant pathologist.

Dr. Lyle discussed the nature and extent of rose growing centered in the Tyler territory and exhibited Kodachromes demonstrating correct methods of commercial and private plantings. He recently prepared a paper outlining plans of the Texas Rose Research Foundation, which now has sixty-five subscribing nurserymen and conducts a research service at Tyler. The paper sets forth information for home gardeners on scientific and approved planting practices for best results with Texas roses.

On the invitation of R. C. Allen, secretary of the American Rose Society, Harrisburg, Pa., Dr. Lyle has written an article on the foundation's organization, which will appear in the 1947 American Rose Annual.

THE annual Johnny Appleseed award of the Men's Garden Club of America has been made to Lambertus C. Bobbink, founder and head of Bobbink & Atkins, East Rutherford, N. J., in recognition of his achievements in the field of horticulture.



Growers of a complete line of deciduous and coniferous species.

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Mail want list for prices.

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Wholesale growers of
SMALL FRUIT PLANTS
Grapes, Currants and Raspberries—
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Lining-out stock
For fall 1946 and spring 1947.
Write for list.

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OBITUARY

A. Robert Thompson.

A. Robert Thompson, 42, forester with the National Park Service since 1933 and a national authority on diseases of shade trees, died November 16 at his home, at Winnetka, Ill., as the result of a heart attack.

Born at Syracuse, N. Y., he was graduated from New York State College of Forestry in 1926. He was a member of Beta Theta Pi fraternity. From 1927 to 1929 he served as city forester of Syracuse.

Active in the administration of the National Shade Tree Conference, he was president of the midwest chapter at the time of his death. As chairman of the lightning-struck tree survey, he filed the final report on several thousand lightning-struck trees at the twenty-second annual meeting of the conference, held at Boston, Mass., August 27 to 30. He was a member of the board of governors and the membership and constitution committees, chairman of the nomenclature and standards committee and a past vice-president of the southern chapter of the conference.

Mr. Thompson was the author of nine tree preservation bulletins which are known as standard works on that subject and in 1939 was author of and head of the department, "Your Shade Trees," in American Forest Magazine. A senior member of the Society of American Foresters, he was also a member of Phytopathological Society and of the American Association of Economic Entomologists.

Survivors include his widow, Zilpha; a daughter, Nancy; his mother, Mrs. Maude Thompson, and a brother, Donald, of Syracuse, N. Y.

Leon L. Smith.

Leon L. Smith, first vice-president of E. D. Smith & Sons, Ltd., Winona, Ont., Canada, and for many years manager of the nursery department, died November 10, at his home at Toronto. He was 47 years old. He was one of Canada's outstanding nurserymen and a rose specialist of international repute. His personal hobby was the magnificent rose test gardens at Winona, which annually attracts thousands of visitors from Canada and the United States.

Born at Winona, Mr. Smith was educated at Hillfield school, the Collegiate Institute of Hamilton and the University of Toronto. He excelled in sports, playing rugby for the Toronto Varsity Firsts team in 1920 and the Hamilton Tigers, Canadian

rugby champions, in 1921. A successful basketball player, he was on the local Y. M. C. A. team which won the Dominion championship and toured the United States in the middle twenties. He was the badminton champion of Hamilton and district in 1935. For a number of years he was an officer of the Argyll and Sutherland Highlanders of Canada (PL) regiment, later transferred to the Wentworth regiment and commanded C company of that regiment, the greater part of which was composed of employees of the firm. Mr. Smith was a director and original member of the Macdonald Club and attended St. John's Anglican church Winona.

Surviving are his father, Senator E. D. Smith; his widow, the former Roberta Thurston; two sons, Thurston and Geoffrey; one daughter, Sheila; one brother, Brigadier Armand Smith, C.B.E., M.C., E.D., president of E. D. Smith & Sons, Ltd., and one sister, Mrs. Gordon Conant, of Toronto and Oshawa.

Wallace R. Pierson, Sr.

Wallace R. Pierson, Sr., 66, president and general manager of A. N. Pierson, Inc., of Cromwell, Conn., died November 4 as the result of a heart attack.

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- Specimen Evergreens
- Flowering Shrubs
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VIBURNUM BURKWOODI

New—Fragrant—Hardy
Pinkish-white flowers in May
Heavy pot-grown stock for lining out. Spring 1947 delivery.

Per 100 Per 1000
2½-in. pots \$35.00 \$300.00
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No charge for packing if check
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60,000 TAXUS

Pots, transplants and rooted cuttings.
2500 J. Pfitzeriana
2 to 3 ft. and 3 to 4 ft.

To trucks F.O.B. our nurseries.

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Immediately after his graduation from Massachusetts Agricultural College, at Amherst, in 1901, Wallace R. Pierson, Sr., entered the nursery and florists' firm which had been established by his father, A. N. Pierson, in 1872. In 1925, following his father's death, he became president of the corporation. Under his direction, A. N. Pierson, Inc., grew to be one of the largest greenhouse establishments in the country, and operated a nursery of 200 acres.

One of the early leaders of the American Rose Society, Mr. Pierson served as president during 1913 and 1914 and was active on the board of trustees for several years.

Mr. Pierson served as a state senator from 1922 to 1928 and held the chairmanship of the Cromwell town board of finance.

Surviving are his widow, Mrs. Mary S. Pierson; two sons, Andrew N. and Wallace R. Pierson, Jr.; a sister, Dr. Emily M. Pierson, and five grandchildren.

Lloyd B. Wardell.

Lloyd B. Wardell, 56, proprietor of Millett Nursery, Lansing, Mich., died as the result of a heart attack October 30. He had been suffering from a heart ailment for several weeks.

Mr. Wardell, who operated the

NORTHERN-GROWN EVERGREENS

Juniperus Virginiana Hilli. 3½ to 4 ft.

Juniperus Virginiana Hilli. 4 to 5 ft.

Juniperus Pfitzeriana. 2 to 2½ ft.

Juniperus Pfitzeriana. 2½ to 3 ft.

Mugo Pine. 15 to 18 ins.

Mugo Pine. 18 to 24 ins.

Black Hills Spruce. 18 to 24 ins.

Black Hills Spruce. 24 to 30 ins.

Taxus Cuspidata. 18 to 24 ins.

Taxus Cuspidata. 24 to 30 ins.

Also a general line of northern-grown evergreens.

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25,000

Peach trees in leading varieties.

20,000

1 and 2-year-old Apple in leading varieties.

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A general line of Shade Trees, Evergreens and Shrubs. We are still booking orders for Apple and Pear grafts for Spring shipment.

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PIN OAKS in all sizes up to 5-inch caliper.

SPECIMEN CEDARS up to 10 feet in height.

AUSTRIAN and WESTERN YELLOW PINES in 6 to 8 and 8 to 10-foot grades.

General assortment of Shrubs in heavy 3 to 4 and 4 to 5-foot grades.

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HEADQUARTERS FOR
EVERGREEN GRAFTS, TRANSPLANTED
EVERGREENS, SHRUB LINERS,
RARE ITEMS YOU DO NOT FIND IN MOST LISTS!
Write!
HILLTOP NURSERIES
CASSTOWN, OHIO

Millett Nursery for thirty years, had landscaped many highway picnic grounds and post-office grounds in Michigan. His firm recently completed the landscaping of the capitol grounds.

Survivors include his widow, three daughters and three grandchildren.

Mrs. Nellie Adams.

Mrs. Nellie Adams, wife of J. W. Adams, of the Richmond Nurseries, Richmond Beach, Wash., died October 28 at the age of 67. She is survived by her husband, J. W. Adams, and a son, O. R. Adams, president of Washington chapter of the American Association of Nurserymen.

OKLAHOMA CITY OFFICERS.

Officers were elected at the November meeting of the Oklahoma City Retail Nurserymen's Association at the office of the Sneed Nursery Co., Oklahoma City, Okla. They are: President, J. A. Maddox; vice-president, Jack Sneed, and secretary-treasurer, Lee Garland.

A schedule of nursery training for veterans, outlined by those firms which are now training men, was read at the meeting and adopted by resolution. The schedule specifies the number of hours to be spent in each of the following fields: Classroom and laboratory work, 100 hours; identification and culture of plants, 700 hours; propagation of nursery stock, 800 hours; greenhouse operation and practices (propagating house), 100 hours; transplanting practices, 500 hours; pest control, 400 hours; fertilizers and soil management, 200 hours; greenhouse and field equipment and repairs, 200 hours; marketing practice, 600 hours; foremanship training, 400 hours, and optional training in landscaping.

SPEAKS AT UNVEILING.

Miles W. Bryant, Princeton, Ill., secretary of the Illinois State Nurserymen's Association, was guest speaker October 31 at the University of Illinois, Urbana, when a portrait of Dr. Joseph C. Blair, dean emeritus of the college of agriculture, was presented to the university. Dean Blair has been associated with the industry for fifty years and has done outstanding work in horticultural education in the United States.

Among those on the advisory committee who helped make the portrait and presentation possible were Dr. Liberty Hyde Bailey, Mr. Bryant, Arthur H. Hill, Frank Simpson, Robert Simpson, Dr. H. B. Tukey, the late Dr. J. H. Gourley, James Sykora and William Werstler.

A NEW APPLE

The Frostproof Patent No. 722, means a crop every year regardless of the frost. It blooms in Virginia the 18th of May, after the danger of frost is well past and it ripens in the fall along with the Winescap. If interested in raising and selling this apple tree, correspond with

MAX NURSERY

Mineral, Va.

WE OFFER

For Spring Shipment

	Per	Per
CORNUS FLORIDA.	10	100
Dogwood.		
3 to 4 ft., branched....	\$1.50	\$12.00
4 to 5 ft., branched....	2.50	20.00
LIQUIDAMBAR STYRA- CIFLUA. Sweet Gum.		
3 to 4 ft., branched....	2.00	15.00
4 to 5 ft., branched....	3.00	20.00
LIRIODENDRON TULI- PIFERA. Tulip Tree.		
4 to 5 ft., branched....	3.00	20.00
5 to 6 ft., branched....	4.00	30.00

The above stock can be shipped now or we will book your order for spring. Terms: Cash with order.

O. H. PERRY NURSERY CO.

Box 545 McMinnville, Tenn.

SURPLUS BOSTON IVY

Per 100

3-yr., 2 to 3 feet.....	\$35.00
2-yr., 18 to 24 inches.....	30.00
2-yr., 12 to 18 inches.....	20.00

ONARGA NURSERY CO., INC.

Onarga, Ill.



Wholesale growers of the best
Ornamental Evergreens,
Deciduous Trees,
Shrubs and Roses.
Write for our current trade list.

THE KALLAY BROTHERS CO.
Painesville, Ohio

SMALL FRUIT PLANTS

Evergreens — Shrubs
Asparagus — Rhubarb.
Send for Complete Trade List.
W. N. SCARFF'S SONS
NEW CARLISLE, O.

New Books and Bulletins

GARDEN LILIES.

While the book "Garden Lilies," by Alan and Esther Macneil, just published by Oxford University Press, at \$3.50, was written primarily for amateur gardeners, who are seeking success with lilies in greater numbers each season, the accurate and practical information contained in the book makes it a valuable addition to commercial growers' libraries as well.

The book is dedicated to William N. Craig and W. A. Constable, the former the author of the first general book on lilies in this country, published in 1928 and now out of print. The arrangement of data on lilies in an alphabetical list in the second half of the book, and the extensive information, follow the form of Mr. Craig's work. This portion of the book comprises eighty-two pages out of the total of 226.

Chapters in Part I discuss the geographic sources of origin, which point out the type of soil, climate and treatment each type of lily should have. Another chapter presents the varieties according to the easy, moderately easy, moderately difficult and difficult lilies to grow; also lilies for fragrance and for cutting.

The chapter on placement suggestions refers to the various types and their successful use and lists the varieties for different purposes. Further chapters are on color, planting, culture and propagation, lilies for pots and exhibition, pests and diseases.

Addenda include information of a botanical character, while a selected bibliography of books and magazine articles and a 14-page index conclude the volume.

The authors left business pursuits in 1937 to take up gardening in Vermont and selected lilies as their specialty. So diligently did they pursue their hobby that they found themselves in business and, in addition, so advanced in their specialty that their advice was sought personally and in the form of magazine articles. Their book is a timely and valuable one.

BLUEBERRY WEED CONTROL.

Results of weed control experiments, most of which were conducted in the blueberry fields of eastern Maine, are presented in bulletin 443 of the Maine agricultural experiment station, Orono. The work of F. B. Chandler and Irvin C. Mason, "Blueberry Weeds in Maine and Their

Control" describes the most important thirty-seven weeds on which records were taken in the blueberry fields and gives methods of control for each. A special section describes chemicals, care and equipment for weed control, and information is given on the cost of weed control in the field.

TREE NUT PROSPECTS.

Nurserymen who are interested in producing edible tree nut crops will find a report issued by the United States tariff commission helpful in determining future markets in this country and abroad and probable competition from foreign production. The report is No. 18 in a series of investigations of the principal domestic industries which have been affected by the war and may be had for 20 cents by addressing Superin-

tendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Details of the nut industry as to prewar status, changes and developments which have occurred during the war and probable postwar status in foreign trade and international competition are given. According to the bulletin, exports of edible tree nuts from this country were relatively small until 1933, when domestic surpluses of walnuts and pecans coincided with a short European walnut crop. The resulting decreased imports did not affect home consumption, however, for they were more

SPECIAL BARGAIN OFFER

We offer 1000 Nursery-Grown Shrubs and Tree Seedlings of our own selection, all guaranteed to be well rooted, 1-yr. plants, and will run from 6 inches to 24 inches, and you will receive these in as many as 6 varieties or more. We will not send stock that will not be hardy in your locality. Send only \$23.50.

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CHRISTMAS TREES

2000 Norway and White Spruce
2 to 6 ft., spaced 5 ft. apart.
Truck or car loads only.
Cut or Dig yourself, 75c each.

ANDERSEN'S EVERGREEN NURSERIES
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ORNAMENTALS
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Wholesale growers of a general assortment for the best landscape plantings.

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ORNAMENTAL SHRUBS
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LINING-OUT STOCKS

PRONOUNCING DICTIONARY
of Plant Names
66 pages, 3000 names, 25c per copy
American Nurseryman Chicago

C. M. Hobbs & Sons, Inc.

BRIDGEPORT INDIANA

Established 1875

FRUIT TREES**GINKGO****NORWAY MAPLE****SOFT MAPLE****SWEET GUM****THURLOW WILLOW****WELL GROWN EVERGREENS, in variety.**

than offset by increased domestic production of tree nuts, so that the average annual consumption during the eight years 1934 to 1941 exceeded that in 1922 to 1925 by about seventeen per cent.

Prospects for the immediate and the long-term postwar periods depend on such factors as consumption, production, imports and prices. As it is doubtful whether by the first half of the 1950's economic conditions and national incomes in Europe will have been fully restored to prewar levels, there will be a strong pressure to export European nuts to the United States, and the European market for edible nuts will probably be overstocked. On the other hand, if United States national incomes stay near their present levels, domestic nut consumption will be greater than ever.

FERTILIZER RESEARCH.

Although ammonium nitrate became available for use as a fertilizer in the spring of 1943, the material first offered for sale proved to be unsatisfactory, owing to its marked tendency to cake and its property of absorbing moisture from the air under humid conditions. In actual use it was found to be completely undrillable and entirely unsuitable for separate application in the field.

Because, despite these drawbacks, ammonium nitrate is a cheap source of nitrogen and has proved agronomic value as a fertilizer, tests were undertaken to find improvements which could be made in its mechanical properties. The division of soils, fertilizers and irrigation of the United States Department of Agriculture accordingly undertook investigations on the production of satisfactory ammonium nitrate fertilizer, and the results of these investigations are presented in technical bulletin number 912, "Preparation of Ammonium Nitrate for Use as a Fertilizer." The booklet may be had for 20 cents by addressing Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

FRUIT VARIETIES.

Intended primarily as a guide to commercial fruit growers on varieties suitable for planting in Ontario, Canada, Bulletin 430, entitled "Fruit Varieties," by E. F. Palmer, has been issued by the Ontario Department of Agriculture. Recommended varieties are grouped in two lists, one of proved varieties which are recommended for general planting and the

GRAPEVINES**Golden Muscat, 2-yr. No. 1****\$40.00 per 100****\$350.00 per 1000****J. E. MILLER NURSERIES**
Canandaigua, N. Y.**GRAPE ROOTS**Grown on gravel land.
(There are none better.)

Catawba, Delaware, Worden, Niagara, Caco, Brighton, Fredonia, Agawam, Moore's Early, Concord and Ontario.

Send us your list of wants for immediate quotations.

CHAMPION NURSERIES
Perry, O.

1-yr. Concord and Niagara

Grapevines

1-yr. Peach

Shade Trees

Flowering Crab

White Dogwood

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WILLOWBEND NURSERY
Davis Road Perry, O.Grapevines, Currant Roots,
Currant Cuttings and Berry Plants.

Small Fruit Specialists.

WEST HILL NURSERIES
Fredonia, N. Y. Since 1875**CUTLER & DOWNING CO.**

BENTON HARBOR, MICH.

**Wholesale Small Fruits**

Reds	Blacks
Latham	Cumberland
St. Regis	New Logan

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Eldorado	Blowers	Alfred
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Currants

Thorny	Thornless
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We suggest early orders.**CUTLER & DOWNING CO.****STRAWBERRY PLANTS**

Large supply of strong Iowa-grown plants. Prompt service.

EVERBEARING VARIETIES. Per 1000
Streamliner \$25.00

Brunes Marvel 15.00

Gem 12.00

Evermore (Minn. 1166) 16.00

Gemzeta 25.00

STANDARD VARIETIES.

Robinson, Dunlap and Blakemore. 8.00

DOLLAR NURSERY, Bloomfield, Ia.**WE OFFER...****Our General Line of****SMALL FRUIT PLANTS**

Let us quote on your requirements.

L. J. RAMBO'S WHOLESALE NURSERIES
Bridgman, Michigan**We wish to purchase...****Evergreens, Fruit Trees,
Shrubs, etc.**

Send your surplus list to -

THE PONTIAC NURSERY CO., Romeo, Mich.

NURSERYMEN

Buy your 2-yr. **APPLE** now.
 5 per cent discount for cash with order, or 25 per cent down and balance C.O.D. Per 100
 5 to 6 ft., well branched. \$40.00
 4 to 5 ft., well branched. 30.00
 3 to 4 ft., mostly branched 22.00
 2 to 3 ft., mostly branched 18.00
 Varieties: **Yellow Del.**, **Red Del.**, **Grimes**, **King David**, **Black Twig**, **Stayman**, **Trans.**, **Maiden Blush** and **Ada Red**. Write for prices on all other kinds of nursery stock. Per 100

PEACH, 18 to 24 ins. \$12.50

ROLLERS WHOLESALE NURSERY
 Rogers, Ark.

1946 • SPRING • 1947

Send us your want list.

Apple, Peach, Plum, Apricot, Grapes, June-bud Peach.

Shade Trees and Ornamentals.

Commercial Nursery Co.
 DECHERD, TENN.

RED RHUBARB

Per 100
McDONALD \$20.00
CANADA RED 40.00

40,000 true-to-name **No. 1** divisions. Let us quote on your requirements.

KEELER'S GARDENS
 Sioux Falls, So. Dak.

STRAWBERRY PLANTS

All Leading Varieties.

Let me ship **STRAWBERRY PLANTS** direct to your customers. Write for details.

ANNA STRAWBERRY NURSERY
 F. G. Anderson, Prop.
 Anna, Ill.

RHUBARB

Sorry, we are all sold out on Rhubarb roots for this season. Will have 200,000 each MacDonald and Chipman's Canada Red to contract for next season.

BASS NURSERY
 Chadron, Neb.

other of recently introduced varieties which are considered promising and are suggested for limited commercial planting.

As supplements to these lists of recommendations, five other parts are included in the bulletin. The figures on fruit population given in tabular form in Part II point out the variety distribution of certain fruits and emphasize the increasing importance of the two leading varieties of apple trees, McIntosh and Spy. Charts in Part III give in graphic form the picking maturity dates for certain fruit varieties, by means of which a grower can readily determine the date of maturity of a given variety and can therefore judge its value for his particular needs, and a composite 2-page chart indicates the picking time interrelationship of all commercially grown kinds of fruits. Considering the pollination problem, Part IV tells which varieties are self-fruitful and which need pollination with other varieties. Brief notes are given in Part V on some of the newer or otherwise noteworthy varieties of fruits, and Part VI is a complete, alphabetically arranged list of all varieties of fruits which have been tested at the horticultural experiment station at Vineland Station, Ont.

GETTING LOCAL PUBLICITY.

Do you have on your grounds any unusual specimen plants? Flowering trees or other items which may be beautiful sights at certain seasons are good for photographs or news notes in your local papers.

One nurseryman last spring had an unusual specimen of Nanking cherry in bloom on his grounds. The local newspaper sent out a photographer and gave considerable publicity to this specimen.

Other nurserymen have capitalized on flowering apples or lilacs or dogwood. Local newspapers are usually glad to run pictures of such displays, thus creating good will for the nurseryman.

L. L.

WENDELL B. LUND and Erick B. Lund have sold Wendell Lund Nursery, at 2452 Robertson boulevard, Los Angeles, Cal., to Herbert C. and Billie Ethel Lumley.

WARTIME emergencies which made it necessary for Frank Primrose to curtail his nursery activities having ceased, he has reopened Louden Nurseries, Pikesville, Md. The nursery is being completely renovated, new stock has been lined out and propagation is now under way.

FRUIT TREES

APPLE, 1 and 2-yr.

Ornamental Shrubs,
 1 and 2-year.

Native tree seedlings.

Lining-out stock.

Write for prices.

SANDERS NURSERY

Rte. No. 5
 McMinnville, Tenn.

PEACH STILL AVAILABLE

We still have a few thousand **Peach in Elberta**, **Red Haven**, **Hale Haven**, **J. H. Hale**, **Ea. Elberta**, **Ea. Hiley** and **Golden Jubilee**. A few thousand **One-year Apple**. Write for our wholesale list.

GROW CONTRACTS

We are still accepting contracts for 1947 delivery: **June-budded Peach**, **Plum**, **Apricots**, **Combination Peach**, **Plum**, **Apricots** and **Apple**, also **One-year Peach**, **Plum** and **Apricots**, for 1948 delivery.

J. C. SISK NURSERY CO.
 Winchester, Tenn.

To The Wholesale Trade

We have the following items to offer:

Apple, 1 and 2-year-old
June-budded Peach
Peach, 2-year
Pear, 1 and 2-year-old
Plums, **Apricots** and **Cherries**

We welcome inquiries, and let us furnish your needs.

FRAZIER NURSERY CO.
 Box 1 Smithville, Tenn.

APPLE SCIONS

Let us have your want list. We have a good supply of leading varieties.

GOLDEN EAGLE NURSERY
 Golden Eagle, Ill.

VEGETABLE PLANT

HEADQUARTERS FOR THE NATION
 Onion, Cabbage, Tomato, Pepper, Sweet Potato.

We ship direct to you or your customer.
 Complete satisfaction guaranteed.

Write for complete information and prices.

W. G. FARRIER PLANT CO.
 Box 195 Omaha, Texas

EVERGREEN SEEDLINGS

lex Opaca,	Per 1000
4 to 6 ins.	\$15.00
6 to 12 ins.	25.00
12 to 18 ins.	40.00
Kalmia Latifolia.	
4 to 6 ins.	15.00
6 to 12 ins.	25.00
Tsuga Canadensis. Hemlock.	
4 to 6 ins.	15.00
6 to 12 ins.	25.00

TREE SEEDLINGS

Cercis Canadensis.	15.00
6 to 12 ins.	15.00
12 to 18 ins.	25.00
Liriodendron Tulipifera. Tulip Tree.	
6 to 12 ins.	10.00
12 to 18 ins.	15.00
18 to 24 ins.	20.00
2 to 3 ft.	30.00
Sugar Maple.	
6 to 12 ins.	15.00
12 to 18 ins.	20.00
18 to 24 ins.	30.00

NOLERIDGE NURSERIES
P. O. Box 26 McMinnville, Tenn.

MACDONALD RHUBARB**Strong Divisions****\$25.00** per 100.**\$200.00** per 1000.

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Progressive Nurserymen
Ottawa, Kan.

QUALITY ROSEBUSHES**2-yr. Bud Stock**

Good standard and patented varieties. Individual packing for counter trade if desired. Bundles of ten or carloads.

Write for our wholesale price list.

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**FRUIT TREES
AND
SMALL FRUITS****HARRISON BROTHERS NURSERIES**

G. Hale Harrison, General Manager
BERLIN, MARYLAND

BUXUS SEMP. WELLERI

(Weller's Hardy Northern Type)
Only Boxwood proved hardy in North-
ern States for Twenty Years.

Ask for our Perennial catalog.
WELLER NURSERIES CO., Inc.
Leading Perennial Growers
Holland, Mich.

**CALIFORNIA GROUP HEARS
ADDRESS BY ARBORIST.**

The Central California Nurserymen's Association met at Green Hill Golf and Country Club, at Millbrae, November 14. Over sixty members and their guests attended, making this one of the largest meetings in several years.

The speaker for the evening was Milard F. Blair, of Palo Alto. An arborist, Mr. Blair is the author of several books, including "Practical Tree Surgery," and is now serving his second term as president of the California Arborists' Association. He discussed problems which are met by men of his profession, and the work of arborists, which is largely the care of trees in parkways and home grounds. Spraying and pruning, as well as the care of larger trees, through tree surgery, provide the major part of the arborists' business.

Spraying, according to Mr. Blair, is the biggest problem. The arborist must know the insects attacking the trees and must keep watch for them, so that he will be ready with the right spray at the right time, before the pests become too menacing. To do this, he must know the life histories and habits of the various pests. Mr. Blair described several of the more common insect and disease pests in the bay area and told how to combat them. He also described how some of these diseases are transmitted, explaining why arborists must use extreme care in all of their operations.

Mr. Blair told of his own work, extending over a period of about ten years, in the control of the oak root fungus, a severe disease of all trees in California. His method of control is to use a two per cent solution of sodium hypochlorite. This is poured on the ground around the infested areas. As no more satisfactory method has been developed, he suggested that nurserymen try it under their own conditions. He warned that one must be sure that it is the oak root fungus he is treating and mentioned that there are many symptoms which are similar to those of this disease, but which are really those of some other disease. Then this treatment is of no value.

While talking about trees in home grounds and parkways, he warned against filling in around a tree when raising the grade. This practice is not to be recommended, for it often causes the death of the tree. Instead of filling in, he suggested that a well be made around the base of the tree and drain pipes installed. Some of these drains would be laid so as to

STRAWBERRIES		Per 1000
Gem Everbearing		\$20.00
Progressive Everbearing		12.00
Banner		10.00
Blakemore		9.00
Klonike		9.00

ASPARAGUS

M. Washington	13.00
Paradise	15.00
Thorny	\$ 6.50
Thornless	10.00

YOUNG BERRIES	
Per 100, \$6.50	

DEWBERRIES

Gem, completely thornless	10.00
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BLACKBERRIES

Cory Thornless	8.00
Cameron (Victory)	10.00
Crandall	7.50

RASPBERRIES

Cuthberts	6.50
Cumberland Blackcaps	7.50
Munger Blackcaps	7.50

LOGANBERRIES

Per 100, \$10.00	
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GOOSEBERRIES

Oregon Champion	25.00
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Perfection	25.00
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The above stock is ready for immediate shipment.

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For winter delivery. Order now while list is complete.

EUROPEAN TYPE, table varieties.	
Thompson Seedless, early, white.	
Monukka Seedless, early, black.	
Malaga Red, early, large.	
Malaga White, midseason, large.	
Ribier, large, midseason, blue.	
Muscat, large, midseason, white.	
Lady Finger, long, midseason, white.	
Black Hamburg, midseason, large.	
Tokay, large, late, red.	
Emperor, late, red.	
Black Malvoisie, table or wine.	

WINE VARIETIES

Alicante, red.	Carignane, black.
Golden Chasselas.	Grenache, black.
Mission, black.	Zinfandel, black.
AMERICAN VARIETIES.	
Concord, black.	Niagara, white.
Delaware, red.	Fredonia, black.
Portland, white.	Caco, red.

Also several other varieties.
1-yr. No. 1 1 yr. No. 2
10 for \$1.50 10 for \$1.00
100 for \$13.50 100 for \$9.00
1000 for \$120.00 1000 for \$80.00

Packing free if cash with order.
Pierce and Phylloxera certificate.

GRIMSHAW CITRUS NURSERY
1021 Dublin Blvd., Hayward, Calif.

SEEDS

Collectors of Tree, Shrub and Wild Flower Seeds

Crude Drugs and Ornamentals

E. C. MORAN Stanford, Mont.

LINERS WANTED

2000 each: *Cornus florida rubra*, *Magnolia soulangiana* and other varieties, *Pfitzer Juniper*. Also need *Juniper* grafts and seedlings, all in ready for the field sizes, for spring delivery.

H. B. HARTLINE FARM
Makanda, Ill.

carry off the water and others would be upright to act as breather pipes, allowing the air to reach the roots in the upper layers of the soil more effectively. Failure to do this, he said, often results in suffocation of the top feeding roots and may cause the loss of the tree.

Present as a guest was Jack Lincke, executive secretary of the California Association of Nurserymen. He advised members that a report of the state convention was being prepared, that name plates to be worn at meetings would soon be delivered and that he had in preparation mats bearing the association seal. These mats can be used in advertising, on cards and letterheads and in other ways to make the public take notice of the association and for what it stands. The purpose in urging the members to use them now is to make better use of state-wide advertising when it begins to appear. Mr. Lincke asked also that the members send him suggestions for improvements in the services of the association; bouquets and brickbats both are welcome, for only from such remarks can he know what is being done well and what needs improvement.

Among the guests at the meeting were veterans who are studying the nursery business at San Mateo Junior College. These men are taking placement training and are widely employed by members of the association. The veterans devote a given amount of time to classroom work and soon should have a good understanding of the business and be valuable additions to the industry. They were introduced by the instructor of the course, George Mangis, who received his training in horticulture at the University of California at Los Angeles.

Announcement was made at the meeting of the successful reorganization of the Redwood Empire Nurserymen's Association. At the first meeting, seventeen members paid their dues for the coming year. The Central group was pleased to hear of this and sent best wishes to the group.

New members introduced at the meeting were John E. Doleman, of Carmel Grove Nursery, Carmel, and William Tiedman, manager of Roger Reynolds Nursery, Menlo Park.

The next meeting will be the annual Christmas party, which will be held at the L'omelette, at Palo Alto, December 12. This is one of the two meetings during the year when the ladies are invited. It is a real party, with no speakers and no business discussions.

FRUIT TREE SEEDLINGS

As specialists in this line, with 30 years' experience, we can give you that satisfaction you wish. You know that good stock year after year doesn't just "happen." It is the result of fine, mellow ground kept to a proper state of fertility, moisture under control, both in the growing and ripening season, and intelligent and experienced care in every phase of growing, digging and packing.

Let us quote on your **apple** and **pear** needs.

CHINESE ELM SEEDLINGS

Another of our specialties. Our seeds were gathered from trees isolated from other types of elms.

C. L. freight rates to some near-by distributing point.

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Toppenish, Wash.

RICH & SONS NURSERY

Offers

a general line of Nursery Stock.

Write for catalog.

Retail catalogs in color available to the trade at cost.

40-page general catalog, 30c

32-page Bulb and Rose Catalog, 25c

RICH & SONS NURSERY

Rte. 4, Hillsboro, Ore.

Urgently Wanted

1-yr., 3 to 4 ft.

1000 MONTMORENCY CHERRY TREES

Or any amount up to 1000.

We still have a supply of Raspberry Plants and Small Fruits.

Write for price list.

CALAPOOIA BERRY FARM & NURSERY

Shedd, Oregon

NOTICE

Limited production makes it impossible to book orders for new customers.

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BALED SHINGLE TOW

(CEDAR SHAVINGS)

WM. A. JOHNSTON

408 Postal Bldg., Portland 4, Ore.

THOMAS HALL has opened the
T & M Nursery, Reno, Nev.

PACIFIC COAST NURSERY

2244 N. Skidmore Ct.

Portland 11, Ore.

Pioneer seedling growers on the Pacific Coast since 1914.

Specializing in fruit tree seedlings. Angers Rooted Quince Cuttings, Chinese Elm Seedlings, Norway Maple Seedlings and English Privet.

We also have Norway Maples, 3-yr. branched, and Norway Whips and E. W. Birch, 3 yrs. old, well branched.

We aim to please with quality stock.

John Holmason & Sons, Props.

SHINGLE TOW

(Baled Cedar Shavings)

MONARCH SHINGLE CO.

P.O. Box 37, North Portland, Ore.

Please mention the **American Nurseryman** when writing advertisers

**MOULDER BROS. BRANCH
GIVES FREE SOUVENIRS.**

Modern retailing methods were employed by Moulder Bros., Glendale, Cal., at the recent opening of their new valley branch at Van Nuys, Cal. The first seventy-five persons to make \$2 purchases were given dwarf fruit trees, and all customers during the shop's opening day were presented with Dutch iris bulbs and packages of soil acidifier.

Advice on the planting and care of nursery stock will be freely dispensed by the staff of the new nursery, which will be open seven days a week, from 9 a. m. to 5:30 p. m. The store building, where garden supplies, seeds and tools are merchandised, is set back 100 feet from the highway to allow for parking and landscaping of the grounds.

Proprietors Paul and John Moulder have placed Allen Quayle in charge of the Van Nuys branch. Mr. Quayle is a graduate of the University of California school of agriculture, at Davis, and a former park foreman at Pasadena.

BECAUSE of old age, A. A. Lingham, proprietor of Lingham's Lily Gardens, Tacoma, Wash., has retired from business. He was a wholesale grower of lily bulbs, azaleas and rhododendrons.

NOTICE was given of the intended sale of the Rainbow Nursery by Angelo Mistone and Phil Greco to Harry Iba and Shig Iba. The nursery is located at 1635 West Florence avenue, Los Angeles, Cal.

H. H. WILHELM, Dinuba, Cal., will soon begin construction of an additional greenhouse and shed at 252 South Alta avenue. Floor space of the greenhouse will be 13x25 feet, and the shed will measure 12x14 feet.

THE nursery industry of Oregon was valued at \$7,500,000 in 1945, with more than 4,600 acres of land devoted to the trade, according to the Oregon department of agriculture's bureau of nursery service.

FIRST prize for nursery exhibits at the San Fernando valley fair, November 1 and 2, was awarded to Ted Beach, owner of LaPlaya Nursery, San Fernando, Cal., and vice-president of the San Fernando Valley Nurserymen's Association. Other prize-winners included: Idso Perennial Gardens, Van Nuys; Smyth's Nursery, Roscoe; Germain's Ranch Nursery, Van Nuys; M. G. Nursery, North Hollywood, and Toluca Lake Nursery, Burbank.

PORTLAND WHOLESALE NURSERY CO.

306 S. E. 12th AVENUE Avery H. Steinmetz PORTLAND, OREGON

Quality Stock

CONIFERS AND BROAD-LEAVED EVERGREENS

SHADE AND FLOWERING TREES

FRUIT TREE SEEDLINGS

FRUIT TREES

DECIDUOUS SHRUBS

VINES AND BULBS

PORTLAND ROSES

Write for our Catalog

A. MCGILL & SON

FAIRVIEW, OREGON

Wholesale Only

GOOD WESTERN-GROWN NURSERY STOCK

Fruit Tree Seedlings
Flowering Ornamental Trees
Shade Trees

Grown right and packed right.
Combination carloads to Eastern
distributing points will save you
on freight.

DOTY & DOERNER, Inc.

6691 S. W. Capitol Highway

Portland 1, Oregon

•
Wholesale Growers
of
General Nursery Stocks

We still have quite a number of
Camellias, Rhododendrons, Speci-
men Boxwood, Nandina and Green
Aucubas. Will try and fill your
needs on other stock in smaller
quantities.

F. A. DOERFLER & SONS

150 N. Lancaster Dr. Salem, Ore.
Phone: 21175 Salem

MILTON NURSERY CO.

MILTON - Since 1878 - OREGON

Oregon and Washington-Grown Apple
and Pear Seedlings, Angers Quince
Rooted Cuttings.

Chinese Elm Seedlings and Trans-
planted Specimen Trees.

Our Sales have been Heavy, but we
have other Items in Surplus.

Send us Your Want List. Please Use
Your Letterhead.

Combination Carloads to Eastern distribut-
ing points at minimum freight cost.



SHERWOOD NURSERY CO.

EVERGREENS - Propagators & Growers
141 S. E. 65th Ave., PORTLAND 16, ORE.

**AS ALWAYS—
OREGON'S BEST SOURCE
of GOOD ROSES**

Limited crops reserved for
established customers.

PETERSON & DERING

Wholesale Rose Growers
Scappoose, Oregon

CLASSIFIED ADS

Five lines, \$1.00,

each additional line 20 cents, per insertion.

BERRY PLANTS

STRAWBERRY PLANTS

Klondike, Dunlap, Aroma, Blakemore, Missionary, 100, \$1.50; 250, \$2.75; 500, \$4.75; 1000, \$8.00.

Tennessee Supreme, Tennessee Shipper 100, \$1.60; 250, \$3.00; 500, \$5.25; 1000, \$9.00.

Progressive or Gem Everbearing, 100, \$1.75; 250, \$3.60; 500, \$6.20; 1000, \$11.00.

Shipped prepaid.

HYSINGER NURSERIES, Cleveland, Tenn.

STRAWBERRY PLANTS, CERTIFIED—3,000,000 Blakemore (yellow-resistant), Aroma, Klondike, Tenn. Supreme, Gem, Evermore and New Streamliner. Grown on new land. Write for prices for spring delivery.

ROMINES PLANT FARM, Dayton, Tenn.

BULBS

IMPORTED HOLLAND-GROWN

TULIP BULBS.

Look at this! Genuine Holland-grown tulip bulbs, 11 to 12 cm., prepaid to you at \$4.00 per 100 if you order 250 of a kind. 10 choice varieties to choose from.

Means good for forcing.

Pride of Haarlem, rose-red, suffused with purple.

*Kornelius, brilliant carmine-red.

*Bartonia, beautiful bright red.

*Watson, fine pure deep yellow.

*Princess Elizabeth, soft lilac-rose.

La Tulipe Noire, "The Black Tulip."

The Bishop, large, violet-purple.

*Carrara, white.

*Campfire, blood-red.

Special: ADVANCE, brilliant scarlet, flushed cerise. Very, very showy. Biggest size bulbs, \$4.80 per 100, postpaid if 250 are ordered.

Bellis Perennis (English Daisy), nice plants ready to transplant, 50c per 100. Minimum order 1000 plants, postpaid.

MATHEWS NURSERY

1216 W. Ridge Rd., Gary, Ind.

GENUINE IMPORTED HOLLAND BULBS.

One of America's best list of the finest varieties and Novelties. All top-size bulbs. Ready for immediate shipment. Send for our free catalog, beautifully illustrated in color, with wholesale discounts.

TULIPS, HYACINTHS, NARCISSUS, CROCUS, LILIES and many other species of miscellaneous bulbs. All reasonably priced.

Also, our wholesale list of PERENNIALS and ROCK GARDEN PLANTS is now ready. Send for your copy.

CARROLL GARDENS, Westminster, Md.

IMPORTED BULBS, prepared for forcing. Hyacinths, L'Innocence and Pink Pearl. Tulips, Golden Harvest, Early Queen, Pink and Scarlet Wonder. Very large bulbs.

Per 100 Per 1000

Hyacinths \$12.50 \$115.00

Tulips 6.25 57.50

WHEELOCK WILSON NURSERY

Marshalltown, Ia.

WHOLESALE PRICES OF CANNA BULBS.

\$6.00 per 100 \$50.00 per 1000

Hungaria, tall, pink; Wyoming, yellow; King Humbert, red; Yellow King Humbert, yellow; President, red; Pennsylvania, orange and red.

BENTON COUNTY NURSERY CO.

Rogers, Ark.

TULIPS—All the best and latest novelties in many varieties. Top-size bulbs, 12 cm. and up. Ideal Darwin, Darwin, New Giant Breeder, Cottage, Single Early, Double Early, Multi-flowered, Rembrandt, American Flag, Lily-flowered, Triumph, Parrot, Chameleon, Chinese Lantern and botanical.

Send for our free catalog, beautifully illustrated in color, with wholesale discount. Free on request.

CARROLL GARDENS, Westminster, Md.

200,000 GLADIOLUS YELLOW EMPEROR. Nos. 1, 2 and 3. High crowned, never been cut. Will sell right for fall delivery.

LYON-AUSTIN FLOWERS, INC.

215 W. Washington St., Suffolk, Va.

EVERGREENS

BUXUS HARLANDI (Harland Boxwood). Fine bushy plants, nice color.

Per 100

2½-inch pots \$35.00

4-inch pots 60.00

BUXUS JAPONICA. Good color, shapely.

2½-inch pots 30.00

4-inch pots 55.00

5 per cent discount for cash with order; no packing charge.

GLEN SAINT MARY NURSERIES CO.

Glen Saint Mary, Fla.

LINING-OUT STOCK
Available Spring 1947.

	Per 1000
White Pine, 2-1, 4 to 6 ins.	\$4.00
White Pine, 2-2, 6 to 10 ins.	80.00
White Pine, 2-3, 20 to 32 ins.	140.00
Norway Red Pine, 2-0, 4 to 6 ins.	20.00
Norway Red Pine, 2-1, 6 to 8 ins.	45.00
Norway Red Pine, 2-2, 7 to 12 ins.	75.00
Western Yellow Pine, 2-0, 4 to 6 ins.	25.00
Western Yellow Pine, 2-2, 12 to 16 ins.	95.00
White Spruce, 2-2, 4 to 6 ins.	70.00
White Spruce, 2-3, 8 to 12 ins.	100.00
Black Spruce, 2-1, 3 to 7 ins.	45.00
Black Spruce, 2-2, 8 to 12 ins.	80.00
Black Hills Spruce, 2-3, 6 to 10 ins.	80.00
Black Hills Spruce, 2-3, 10 to 14 ins.	120.00
Engelmann's Spruce, 2-2, 4 to 7 ins.	75.00
Balsam Fir, 2-0, 2 to 4 ins.	30.00
Balsam Fir, 2-3, 8 to 10 ins.	110.00

LINED-OUT STOCK.

	Per 1000
Mugho Pine, XX, 8 to 10 ins.	\$0.60
Mugho Pine, XX, 10 to 12 ins.	.90
Colorado Blue Spruce, XX	
12 to 18 ins.	2.00
18 to 24 ins.	3.00
Colorado Green Spruce, XX	
18 to 24 ins.	2.00
White Spruce, XX, 12 to 18 ins.	.85
White Spruce, XX, 18 to 24 ins.	1.10
White Spruce, XX, 24 to 30 ins.	2.50

LINED-OUT STOCK.

	Per 1000
Mugho Pine, XX, 8 to 10 ins.	\$5.00
Mugho Pine, XX, 10 to 12 ins.	.90
Colorado Blue Spruce, XX	
12 to 18 ins.	2.00
18 to 24 ins.	3.00
Colorado Green Spruce, XX	
18 to 24 ins.	2.00
White Spruce, XX, 12 to 18 ins.	.85
White Spruce, XX, 18 to 24 ins.	1.10
White Spruce, XX, 24 to 30 ins.	2.50

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18 to 24 ins.	3.00
Colorado Green Spruce, XX	
18 to 24 ins.	2.00

HARDY PLANTS

PEONIES.

	Per 10 Per 100 Per 1000
Alexandre Dumas	\$3.00 \$27.00 \$250.00
Baroness Schroeder	7.50 60.00 500.00
Candidissima	4.00 35.00 300.00
Cheatin Gowdy	10.00 85.00 600.00
Cherry Hill	7.50 60.00
Delicatissima (Fl. Tr.)	3.00 27.00 250.00
Edulis Superba	3.00 27.00 250.00
Festiva Maxima	3.00 27.00 250.00
Floral Treasure	3.00 27.00 250.00
Fragrans	3.00 27.00 250.00
Karl Rosefield	7.50 60.00 500.00
Lady Lenora Bramwell	3.00 27.00 250.00
Le Cygne	20.00 180.00
L'Eclatante	5.00 50.00 500.00
M. Jules Dessert	10.00 125.00
M. Jules Elle	6.00 55.00 500.00
Officinalis Rubra	6.00 55.00
Reine Hortense	6.00 55.00 500.00
Sarah Bernhardt	6.00 55.00 500.00
Solange	6.00 55.00
Queen Victoria	3.00 27.00 250.00
Peonies according to color:	
White and Pink	3.00 25.00 230.00
Red	3.50 30.00 250.00

PHIL LUTZ PEONY FARMS,
Boonville, Ind.

HARDY ENGLISH CHRYSANTHEMUMS, field clumps. Our choice, 15 varieties, \$5.00, or 30 for \$10.00. Other hardy Mums: Amber Glow, Algonquin, Red Gold, Chippewa, Red Riding Hood, Avalanche, Mrs. Hastings, Burghundy, Harbinger, Autumn Lights, Mrs. Zeeman, Robert Brydon, Solid Gold, 35¢ each. Yellow Anemone, Ruby Pom, Silver Ball, Sioux, Sandra, Vivid, Minong, Sunkist, Red Flare, Cimarron, Sappho, 25¢ each. Double Shasta, Daisies, Hartje and Elder, 3¢ each. *Asternia lactiflora*, *Adenophora hilfolia*, *Sedum spectabile*, Double Columbine, *Centauraea*, *Dianthus* Furst Bismarck, *Liriope* *Exiliflora*, *Stokesia cyanea*, divisions 5¢ each. Cash. F.O.B. HILLVIEW GARDENS, Fort Madison, Ia.

PRIMULA POLYANTHA. Western Rain-bow Giants. Seedlings sold out until November. X plants, \$12.50 per 100, will bloom heavily next spring. Seeds, Tr. packet, \$1.50, or \$2. Also seeds, pulverulenta, dentata, floridæ, auricula. Trade pkt, \$1. WESTERN HORTICULTURAL SUPPLY
3629 S. E. 67th Ave., Portland 6, Ore.

HARDY CHRYSANTHEMUMS, heavy field-grown plants, Pink Dandy, October Beauty, Bronze and Pink Cushion, \$5.00 per 100. Lily of the Valley, 7 or more pips to a clump, \$15.00 per 100. *Yucca filamentosa*, field-grown clumps, \$15.00 per 100. ECONOMY NURSERY CO., Little Silver, N. J.

PEONIES.

Good cut flower varieties, 3 to 5 eyes. 65 per cent red, 25 per cent pink, 10 per cent white. \$20.00 per 100.

Sold by colors only.

SUNSET NURSERIES, Sioux City, Ia.

BLEEDING HEARTS

DICENTRA SPECTABILIS, to 5 eyes, \$40.00 per 100. DICENTRA EXIMIA, 3 to 6 eyes, \$20.00 per 100. Cash with order. J. HENDRIKS, Grower, Portage, Mich.

If you don't find what you want try a Classified Ad under the heading "Wanted." It's cheaper than mailing out a want list.

ROOTS

VICTORIA RHUBARB ROOTS.

	Per 100 Per 1000
1 to 1½-in. cal.	\$5.50 \$50.00
2 to 1-in. cal.	4.00 35.00
½ to ¾-in. cal.	2.50 20.00

Freshly dug; immediate shipment.

C. D. WRIGHT
Hamburg, Ia.

VICTORIA AND LINNÆA RHUBARB ROOTS for late fall delivery in the following grades: ½ to ¾, ¾ to 1, 1 to 1½-in. and up. Also small lining-out stock. Write for prices now. Extra fine stock. ASHCRAFTS PLANT NURSERY Copemish, Mich.

STRAWBERRY RHUBARB

	Per 100
Jumbo size divisions	\$12.00
Medium size divisions	9.00
Small size divisions	6.00
Less 15 per cent in lots of 500 or more. Ready to ship now, cash with order.	

GRIMSHAW NURSERY, Hayward, Calif.

ASPARAGUS ROOTS.

Washington asparagus, 1-yr., light grade, \$5.00 per 1000. Immediate shipment. No order less than 500 plants.

C. D. WRIGHT, Hamburg, Ia.

SEEDS

PEACH PITS, Southern-collected, high germination \$3.00 bu.; Peach seedlings for budding or grafting \$25.00 per 1000, \$3.00 per 100. Boxwoods, Shrubs, Fruit trees. Cash with order. RIVERDALE NURSERIES, Riverdale, Ga.

CALIFORNIA PEACH SEEDS

California Lovell Peach Pits from 1946 crop. Well cared for in drying. In bags of about 10 lbs. Each \$3.00 per bushel. In lots of ten and up, \$2.50 per bushel, F.O.B. Rogers, Ark.

BENTON COUNTY NURSERY CO., INC.

Rogers, Ark.

PRIVET, CALIFORNIA—1-year
Heavily Branched, Strong Stock.

	Per 1000
12 to 18 ins.	\$40.00
18 to 24 ins.	50.00
24 to 30 ins.	60.00

Write for quotations on quantities. No shipping.

EVERGREENS ACRES
U. S. Route 13, McDonough, Del.
P. O. Middletown, Del.

Offering some fine collected plant material, suitable for landscape work, including the following: *Arctostaphylos Uva-Ursi*, *A. manzanita*, *Vaccinium ovatum* (Evergreen Huckleberry), seedling plants with fine root systems. Also good plants of *Gaultheria Shallon*, *Pachystima Myrsinifolia*, *Maonia Nervosa*, *ALVIN H. SCHNELL HARDT*

RT. 1, Box 31 Poulso, Wash.

ROSES

See our display ad on page 26.

OZARKS PLANT FARMS, INC.
Springfield, Mo.

VINES

CONCORD GRAPEVINES.

No. 1, 1-yr. old, \$6.00 per 100, \$50.00 per 1000. California Privet, 12 to 18 ins., \$3.50 per 1000. PONZER NURSERY

Rolla, Mo.

MISCELLANEOUS

CONCORD GRAPE CUTTINGS, carefully made, tied with wire 100 to bundle, \$4.50 per 1000. *Fredonia*, \$6.00. *Strong*, 1-yr. Concord vines, \$7.00 per 100; \$65.00 per 1000. Extra-heavy rooted Boysenberry and Younsherry, \$40.00 per 1000; bearing size, \$60.00. Thornless Boysenberry or Younsherry, \$50.00 per 1000; bearing size, \$75.00. All F.O.B. here. IDEAL FRUIT FARM, Stilwell, Okla.

Pachysandra terminalis, heavy rooted cuttings, \$4.00 per 100; \$35.00 per 1000. Hardy Ivy Baltic, heavy rooted cuttings, \$4.00 per 100; \$35.00 per 1000.

Hardy Ferns, *Polystichum*, out of 24-in. pots, \$10.00 per 100; \$90.00 per 1000. Out of 4-in. pots, heavy, 25¢ each.

EAST HILL NURSERIES
Chesterland, Ohio

DECORATIVES

BOUGHS: Spruce and Balsam, \$4.00 per 100 lbs; \$75.00 per ton. Hemlock and White Pine, \$2.75 per 100 lbs; \$65.00 per ton. SPRAYS, heavily laden with cones: Spruce, 18 to 24 ins., \$15.00 per 100; Hemlock, 18 to 24 ins., \$10.00 per 100. ROPING: White Pine, Laurel and Hemlock, 22¢ per yd. Lycopodium, 24¢ per yd. WREATHS, per doz. Spruce, Balsam, Hemlock and Laurel, 10 ins. 48: 12 ins., \$5.40; 14 ins., \$6.00. LYCOPODIUM, 10 ins., \$5.10; 12 ins., \$5.70; 14 ins., \$6.30. Your choice of 4 sample 12-in. wreaths, \$2.00, postpaid.

MAPLEHORST FARM NURSERY
Tel. Monticello 504F13 Monticello, N. Y.

PINE CONES. Per 100
Loblolly Cones 3 to 4½ ins. \$2.00
\$16.00 per 1000.
Hard Cones 1½ to 2½ ins. 2.00
White Pine Cones, ¾ to 6 ins. 2.00
Hard or White Cones, \$16.00 per 1000.
Slash Cones, 4 to 6 ins. 3.00
Lonsleaf Cones, ½ to 7 ins. \$2.00 per bu.
Assorted Cones, \$3.00 per box.
Sample box of our cones, labeled, postpaid, \$2.00.

MARYLAND NURSERY, Edmonston, Md.

SUPPLIES

A. F. S. "EASI-OFF" WOOD PLANT BANDS
Size in ins. Weight per 1000 Per 1000
1½ x 1½ x 2½, 12 lbs. \$3.35
2½ x 2½ x 2½, 15 lbs. 3.60
2½ x 2½ x 3, 20 lbs. 4.20
3 x 3 x 3, 21 lbs. 4.60
3 x 3 x 4, 32 lbs. 5.30
4 x 4 x 4, 40 lbs. 6.30

Packed 1000 to the carton.
We do not break the cartons.

LIGHT WOOD FLATS.
For handling and shipping our 1½-inch and 2-inch sizes of Plant Bands.

M-270: holds twelve 1½-inch Bands \$2.75
M-290: holds twelve 3-inch Bands 3.20
M-322: holds twelve 2½-inch Bands 3.75
M-393: holds six 3-inch Bands 3.55
M-394: holds six 4-inch Bands 3.95

Packed 100 to the carton. We do not break cartons. Shipped promptly from the factory in Michigan.

AMERICAN FLORIST SUPPLY CO.
1335 W. Randolph St. Chicago 7, Ill.

PROFIT WITH PER-O-RAIN.

Rain when you want it—low pressure—rectangular strip watered—No overlap—No sprinkler heads or other gadgets—Portable lightweight pipe—Long life. Write for free folder. W. R. AMES COMPANY OF FLORIDA, 8905 E. Broadway, Tampa 5, Florida. or W. R. AMES COMPANY, 180 Hooper St., San Francisco 7, Calif.

SUPPLIES—Continued

KNOCK-DOWN FLATS. Made from a good grade of Southern Yellow Pine, since Cypress is not available. Standard specifications, inside measurements.
 16x12x2% \$16.25 per 100
 16x14x3% 20.50 per 100
 20x14x2% 20.00 per 100
 20x14x3% 22.00 per 100
 22% x15x2% 22.00 per 100
 22% x15x3% 25.00 per 100
 All other sizes quoted on request. Prices F.O.B. Birmingham.

We are manufacturers, not jobbers. Freight to any point is a small item per flat. Our flats are the best. Why pay more? Our quality guaranteed. Prompt shipment, any quantity. Attach check to order.

HIGHTOWER BOX & TANK CO.
 Birmingham, Ala.

CANE STAKES.

Carefully selected. Uniform quality. Properly cured and dyed dark green.

STANDARD, pencil thickness.
 No. G-32 2 1/2 ft. Bale of 2000 \$13.90
 No. G-33 3 ft. Bale of 2000 16.85
 No. G-34 3 1/2 ft. Bale of 2000 19.45
 No. G-35 4 ft. Bale of 2000 23.35

TONKIN STAKES—Bamboo.

Dyed Green—Medium Heavy.
 No. G-42 3 1/2 ft. Bale of 500 \$7.75
 No. G-43 4 ft. Bale of 500 8.70
 No. G-44 5 ft. Bale of 500 11.85
 No. G-45 6 ft. Bale of 500 13.75
 No. G-46 7 ft. Bale of 200 7.70

We cannot break them. Quantity discounts, 10 to 24 Bales, 5 per cent. 25 Bales or more, 7 1/2 per cent.

SCHUPP SUPPLY CO., Wilmette, Ill.

TRE-TEX Saves any tree from damage by rabbits, mice, gophers, etc. Also effective repellent for fruit tree borer, scab, winter-kill. Also used as adhesive in any dust spray. Applied any time of year like varnish and lasts at least one year. Applied to 100 trees in one hour. Unused portion never spoils. Results guaranteed. Prices Postpaid: 1 pound, \$1.00; 10 lbs., \$9.00; 50 lbs., \$45.00; 100 lbs., over \$80.00. F.O.B. Noblesville. Used at Orchardview since 1942. Sold in 20 states in 15 months. Trade Mark patent issued 1946. Rev. E. L. Eckerley, Box 91, Noblesville, Ind.

FINE SCREENED PEAT

Acid pH 4-8. Some Nitrogen. Our Peat is excellent for Gardenias, Camellias, Azaleas and Hydrangeas, also for mixing with soil for potting, seed flats and mulching. Order early. Packed in 2-bu. bags, 5 to 24 bags, \$1.00 each; 25 to 48 bags, 95¢ each; 50 to 100 bags, 90¢ each. Bulk carload, about 50 yards or 600 bags, \$275.00 per car. We ship same day order received. Cash, please.

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BAMBOO CANE STAKES.

Special sizes supplied on request.
DYED GREEN, pencil thickness.

Contents	Price	
Per Bale	Per 1000	
1 1/2 ft.	.1000	\$ 5.00
2 ft.	.1000	6.50
3 ft.	.1000	8.00
3 1/2 ft.	.1000	10.25
4 ft.	.1000	12.00
5 ft.	.1000	18.00

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CHECKED CANE STAKES.

Size	Per 1000
18 ins.	\$3.80
24 ins.	4.10
30 ins.	4.40
36 ins.	4.80
48 ins.	6.20

2000 per bundle.

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MAGIC ELECTRIC WELDER, 110-volt AC-DC; welds, brazes, solders, cuts all metals easy to use; full directions. Complete with power units, flame and metallic arc attachments, carbon electrodes, rods, mask. Only \$19.95. Used by the Navy. Guaranteed one year. Splendid for nursery and farm use.

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SOIL HEATING EQUIPMENT, designed by a grower and engineer, for commercial propagation. Cable, soil thermostat and pilot lamp to heat 20 sq. ft., \$11.40; 40 sq. ft., \$14.35; 60 sq. ft., \$17.10; 80 sq. ft., \$19.95, and 150 sq. ft., \$28.06. F.O.B. Seattle.

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SOIL HEATING CABLE by "GRO-QUICK." Now shipping heavy duty cable. New soil temp. thermostat with pilot light. \$5.50. Bottom heat can't be beat for rootings cuttings, for forcing. See advt. this issue.

GRO-QUICK,
 366 W. Huron St., Chicago 10, Ill.

SPECIAL SALE
 Sphagnum moss, long fibered in standard burlap bales at \$1.55. Milled sphagnum moss for control of damping off in seed flats, etc., at \$1.55 per bag. F.O.B. Woodland, Minn.

COLBY PIONEER PEAT CO., INC.
 Hanlon, Ia.

PAPER FLOWER POTS, red. 1000 2-in., 2600 2 1/4-in., 1800 2 1/4-in., 3000 3-in., 5200 3 1/4-in., 1000 4-in., \$75.00. Labeled: 1450 2-in., 1600 2 1/4-in., 850 2 1/4-in., 3600 3-in., \$20.00. Not used, will exchange for evergreen liners.

THOMAS NURSERY, AFFTON, MO.

WANTED TO BUY.
 1000 Hemlock Seedlings, nursery-grown, not collected. 500 Taxus cuspidata, lining-out size. 500 Taxus cuspidata brevifolia, lining-out size.

STEELE'S NURSERIES, Palmyra, N. J.

SEED STORE FIXTURES.
 Bins, Cabinets.

WALKERBILT
 Penn Yan, N. Y.

GIBRALTAR FROST Covers pay for themselves. Economical, long-lasting, ideal for windbreaks, 6 ft. wide; 50 ft., \$13.75; 100 ft., \$26.00; 150 ft., \$39.00. NEW AMSTERDAM IMPORT, 122 Chambers St., New York 7 N. Y.

"NAMSCO" Dutch-type Burlap Squares, soft, easy to tie. Save time, labor, twine. Write NEW AMSTERDAM IMPORT CO. INC., 122 Chambers St., New York 7 N. Y.

WANTED
 What have you to offer in Strawberry Plants, Grapevines, Raspberry Plants, Boysenberry Plants, lining-out stock Evergreens and Shrubs; fall and spring delivery; write us, Box 710.

E. W. TOWNSEND & SON NURSERIES
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WANTED FOR SPRING 1947.
 1000 Colorado Blue Spruce; 12 inches, twice transplanted.

VILLA PARK EVERGREEN CO.
 Villa Park, Ill.

WANTED

1000	Chinese Elm. 4 to 5 ft.
1000	Chinese Elm. 5 to 6 ft.
500	Chinese Elm. 6 to 8 ft.
500	Chinese Elm. 8 to 10 ft.

R. P. Seedlings or Trees.
500 Maple, Soft. 6 to 8 ft.
300 Jun. Pfitz. 15 to 18 ins., B&B
200 Jun. Pfitz. 18 to 24 ins., B&B

LAKE'S SHENANDOAH NURSERIES
 Shenandoah, Iowa

AFTER working in a war factory during the war, Mrs. M. Chadima has reopened Chadima's Gardens, Cedar Rapids, Ia.

FREIGHT cars will continue to be acutely short in number for the next year, because of needed repairs and the number that must be retired. Most serious is the lack of refrigerator cars, while boxcars are next on the scarcity list.

L. O. PETERSON, sales manager, general manager and director of Hankinson Nursery Co., Hankinson, N. D., since 1925, is also starting his own nursery, to be known as Fargo Nurseries. During the war emergency he examined national banks and has just been released by the comptroller of the currency.

DEMAND TO DETERMINE INSECTICIDE OUTPUT.

The early ordering of insecticides and fungicides for use in 1947 is urged by the Agricultural Insecticide and Fungicide Association in its publication, the A. I. F. News. Stressing the fact that an early notice of what is needed and wanted will be an important guide to them in the production and distribution of their products, the manufacturers of insecticides and fungicides believe that continued cooperation from the federal bureau of entomology and plant quarantine, the state experiment stations and the distributors, dealers and users of their products will result in the best possible distribution of items which will necessarily be in short supply.

The industry regards as a favorable development the voluntary decontrol by OPA and the Secretary of Agriculture of most finished insecticides and fungicides. It will now be possible to enter world markets for available raw materials, such as arsenic, which are critically short in the United States. Production of such materials as copper fungicides will be stimulated by the removal of price ceilings. Although some prices undoubtedly will be advanced, manufacturers believe that competition should control any which are not based on increased labor, container and other costs.

As the manufacture of insecticides and fungicides is interlinked with the mining, heavy chemical and other industries, the possibility of producing sufficient quantities of the products to satisfy the demand is directly related to the outlook in these allied fields. Copper production is improving, according to the Copper Institute, but is not yet equal to that of a year ago. Scrap is almost unobtainable.

Lead is urgently wanted for storage batteries, paint and other civilian necessities. The Lead Industries Association reports a raw lead demand of 80,000 tons a month, domestic mine production of 25,000 to 30,000 tons and total imports limited by the government to about 8,000 tons. A strike at one of the largest lead mining companies, involving about forty per cent of the national production, has affected the supply of this material.

Peru is still the only source of rote, none, of which the insecticide and fungicide industry expects about 8,000,000 pounds, roughly equal to that received last year, when demand exceeded supply. Shipping strikes have delayed seasonal arrivals, and future supplies depend on shipping

and on the willingness of Peru to sell after the trade agreement expires May 7. Nicotine supplies should also equal last year's, which were insufficient to meet demand. Exports to fill government requirements must be continued.

The arsenic shortage affects calcium arsenate output. Cryolite stocks are the lowest on record, but can be reestablished if growers make known their requirements early.

Pyrethrum supplies should be adequate, as fairly large stocks are on hand. Shipping strikes will determine future arrivals. The sulphur outlook is good.

DDT production can equal last year's, but demands will increase. Chlorine for its manufacture is scarce, and the adequacy of DDT insecticides can better be estimated in a month or two. Many other new organics, such as hexachlorocyclohexane and 2,4-D, also require chlorine, so that their production cannot be estimated.

COVER ILLUSTRATION.

Platanus Acerifolia.

The London plane tree, *Platanus acerifolia*, is the tree erroneously listed by many nurseries as the Oriental plane tree. The plane tree commonly grown in nurseries is the London plane tree, a hybrid between *Platanus orientalis* and *Platanus orientalis*. True specimens of the Oriental plane tree are rare in this country.

The three species of *platanus* are not difficult to identify if plants are old enough to fruit. Our common sycamore, or American plane tree, usually bears solitary fruit heads. The London plane tree has two, or occasionally more, fruit heads in a cluster, while the Oriental plane tree has three or more fruit heads in a cluster. In leaf form, the leaves of the Oriental plane tree are deeper-lobed than the other two species. The bark of the American plane tree is whiter than that of the London plane tree.

The London plane tree, *Platanus acerifolia*, is a slower-growing and less massive tree than our native American plane tree. In outline the London plane tree is quite round-headed and heavily branched, and it bears large, 3 to 5-lobed leaves.

The London plane tree is adaptable to a wide range of soil conditions, and perhaps its outstanding feature is its ability to resist smoke and other adverse city conditions. It is one of the most commonly planted trees for congested business districts.

TROLLEY CHAIN HOIST

USED TO ADAPT QUICKLY ANY TRUCK FOR HEAVY

LIFTING—HAULING—LOADING

IDEAL FOR LIFTING AND TRANSPLANTING TREES

Nurserymen everywhere have found these Spur Geared Trolley Chain Hoists (Wright or Yale) ideal for lifting and hauling even the largest trees. These hoists are 1 1/4-ton capacity and were designed for use by the Army on 2 1/2-ton 6x6 cargo trucks. One man can easily lift a large tree—haul it to a new location and place it accurately into position. This hoist can be used profitably and economically in your business, saving time and labor for you.



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WANT ADS

Help and Situation Wanted and For Sale advertisements.

Display: \$2.50 per inch, each insertion.
Liners: 20¢ line; Minimum order \$1.00.

HELP WANTED

Foreman with knowledge of big tree moving: must be capable of handling men and getting production, must understand operation of standard types of tree moving equipment, and be able and willing to travel in New England and elsewhere. Steady year-round work; salary arranged. Address Box 469, care of American Nurseryman.

SITUATION WANTED—Nurseryman, 38, married, experienced grower, salesman, landscaper, college graduate, desires permanent position with eastern retail nursery. Address Box 470, care of American Nurseryman.

SITUATION WANTED—Can I represent your line in the Pacific Northwest? What's your deal? Personal details on request.
FRED P. H. CLYDE, CLYDEMONTE NURS.
11506 S. W. 35th Dr. Portland 1, Ore.

SITUATION WANTED—Am disabled veteran, under vocational rehabilitation. Desire on-the-job training as nurseryman, greenhouse man, or in florists' work. Have experience; am experienced landscape gardener. Write to ROBERT F. JORDAN, 813 Lincoln St., Laredo, Texas.

FOR SALE—Established business 100 miles from any nursery competition. 32,000 population. \$5,000.00 annual plant industry. Great opportunity for a young man. Reason for selling, old age. Write for particulars. Address Box 466, care of American Nurseryman.

A few years ago a rather serious disease of the London plane tree developed in the eastern area around Philadelphia. This disease is known as the canker stain disease. It has been found that the disease is spread largely by pruning tools. Recommendations indicate that pruning, as far as possible, should be done be-

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6 to 12-inch liners...	\$2.00	\$15.00
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12 to 18 inches, 2 br. up	3.50	30.00
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LIGUSTRUM OVALIFOLIUM.

Ovalifolium, California Privet.

12 to 18-inch liners...	2.00	15.00
12 to 18 inches, 2 br. up	3.00	25.00
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LIGUSTRUM SINENSE.

South Privet.

12 to 18 inches.....	1.00	5.00
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We offer this stock for immediate shipment, although we will book your order for spring if you send cash with order.

O. H. PERRY NURSERY CO.
Box 545 McMinnville, Tenn.

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Loss and damage claims against railroad and express companies collected.

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- SPRA-SHIELD protects plants with a dense, hard, laminated coating, applied with a garden sprayer. Plants so protected are seldom molested by cottontail rabbits, mice, rats, shrews and other rodents. One application usually sufficient.
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If local dealer cannot supply, order direct. Please include dealer's name and address.

1 Qt., \$1.40 1 Gal., \$3.00
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Check with order. Express charges collect.

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Write for catalog.

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827 S. Harvey Ave. Oak Park, Ill.

tween December 1 and February 15. The use of common tree wound paints is to be avoided. If it becomes necessary to prune other than during the time specified, all pruning tools should be sterilized between cuts. When wound paints are required, the use of a gilsonite varnish fortified with two per cent phenyl mercury nitrate is recommended.

Anthracnose is another common disease of the plane tree. Fortunately the London plane tree is much more resistant to this trouble than our native plane tree. A criticism frequently raised concerning the use of plane trees as lawn specimens is the long period over which the foliage drops. This long period of leaf fall necessitates considerable lawn raking to maintain an attractive lawn area. Propagation of the London plane tree is usually accomplished by hardwood cuttings.

A London plane tree will find its use as a specimen for street planting in congested areas, where it is one of the most tolerant of our shade trees, but will be used somewhat less as a street tree in residential areas and as lawn specimens. L. C. C.

MICHIGAN STUDENTS VISIT NURSERIES.

Several students taking the nursery training course at Michigan State College, East Lansing, visited the Monroe, Mich., section November 8 to observe mechanical tree diggers at work at Greening Nursery Co. and I. E. Ilgenfritz' Sons Co., and to inspect storage cellars and other facilities. Only those with a particular interest in fruit tree production were taken on the trip. The group left East Lansing in a pouring rainstorm at 8 a. m., but by the time they arrived at Hidden Lake Gardens, the arboretum in the Irish Hills recently donated to the college by Harry A. Fee, the skies had cleared somewhat and Superintendent Clarence Hoxsie showed them the immense potentialities of this beauty spot as a repository for rare plant material.

After a brief view, the party was again on its way and by 11 a. m. had arrived at Greening Nursery Co., where Charles Greening and Harry Malter were prepared to show the students the unique laborsaving machine they have devised to make nursery operations quicker and cheaper. At noon, Mr. Greening and Mr. Malter were hosts at Joe's for a steak dinner.

At the Ilgenfritz establishment, James Ilgenfritz, Dan Niellsen and Elmer Salow met the group and guid-

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BED HEATER**

BOTTOM HEAT CAN'T BE BEAT
For Early Plant Starting
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**GROW PLANTS
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An odorless, concentrated, balanced plant food. All nutrients, trace elements and plant hormone. Water soluble. Attractive, easy to handle packages 10c to \$15.00 each. Fast Seller . . . Big Profits. Nationally advertised—immediate delivery. Write today.

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PEAT

Now booking bulk car shipments for 1947 spring and summer delivery of Black cultivated Peat and Moss Peats.

"Quality Peats for All Purposes."

ELI COLBY COMPANY
Hawthorn, Iowa

ed them through the storage cellars and propagation units and to the fields to see the company's particular brand of tree digger take out peach trees. Those who made the trip were John T. Boyd, McMinnville, Tenn.; Robert C. Chase, Huntsville, Ala.; William M. Conway, Romeo, Mich.; Jack E. Frost, Flint, Mich.; Earl B. Pringle, Decker, Mich.; John R. Sayles, Ionia, Mich.; Orie J. Wiebusch, Lake City, Minn., and Prof. F. L. O'Rourke, of Michigan State College.

Hunziker Discusses Plans.

Harold Hunziker, of Niles, Mich., secretary of the National Landscape Nurserymen's Association, displayed and interpreted the plans for nursery sales and display grounds which were submitted in the nation-wide contest jointly sponsored by the association and the American Nurseryman, before a large and attentive audience at Michigan State College, November 12.

While Mr. Hunziker's talk was directed primarily to students enrolled in the nursery and landscape management training course, it aroused interest and drew students from other divisions of the college, as well as several local nurserymen.

The original plans, which have been mounted on stiff cardboard, were on display at the college throughout the month of November.

Nursery Club Elects Officers.

Students in nursery and landscape management at Michigan State College were elected officers of the Nursery Club at a recent meeting of the organization. They are: President, Orie Wiebusch, Lake City, Minn.; vice-president, John Boyd, McMinnville, Tenn.; secretary, Ruth Miller, Anacostia, D. C., and treasurer, Barney Gleason, Stevensville, Wis. Members of the executive committee include William Conway, Birmingham, Wis.; Harry Brumpton, Windsor, Ont., Canada, and Marvin Logerquist, Bark River, Wis. Faculty adviser is Prof. F. L. O'Rourke, of the department of horticulture.

FRANK and Andrew J. Colnar, partners, have established the Maple Heights Landscape Service Co., 17388 Broadway, Bedford, O.

HENRY FIELD SEED & NURSER CO., Shenandoah, Ia., has opened a new retail store at St. Joseph, Mo. The business, which is known as the Henry Field St. Joseph Seed Store, Inc., carries a full line of nursery stock, field and garden seeds and other items.

AUTOMOTIVE TREE MOVERS



The above is a picture of one of our 7-foot Rocker Type Tree Movers owned and operated by the Laur Shade Tree Service, St. Louis, Mo. The tree is a large sugar maple weighing slightly more than five tons. This is the third mover purchased from us by this company.

On short hauls it is possible to move five or six big trees within a day's time. We can use this mover as a crane to load trailers or other trucks for longer hauls.

Place your order early so that you will not be disappointed as all steel stocks are scarce and our production is limited. Write for further information.

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Mention The American Nurseryman when you write.

NOW TRY PARAGON SPRAYER No. 3 in Your Nursery, Orchard and Propagating Beds.

Ten days' trial will convince you that Paragon Sprayer No. 3 will do your spraying and whitewashing better, faster and easier or it will cost you nothing. Oversize air chamber maintains higher pressure—more uniform spray. Longer pipes and hose reach greater area from one position. Compact truck stands steady on uneven ground; can't jam in narrow places; extra-wide metal wheel rims prevent cutting into turf. Continuous agitation keeps solution from settling in container or clogging strainer and nozzles. Equally effective with any spray, insecticide, disinfectant or water paint anywhere, any time.

Complete with pipes, hose and nozzles, \$27.20. Air gauge, \$2.60 extra. 12-gallon capacity. One-wheel truck if specified.

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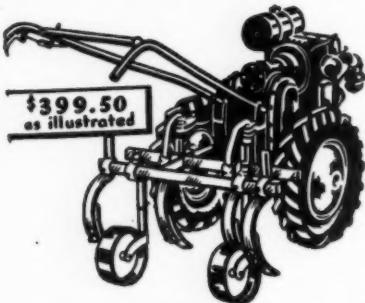
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CAPACITIES 14 IN. TO 7
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EFFICIENT DEPENDABLE ECONOMICAL

- 3 H.P., 4 cycle, Wisconsin air-cooled engine.
- Plows up to 1 acre a day—seeds, cultivates and harrows up to 4 acres per day.
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- New patented drawbar insures precision cultivation.
- Has forward and reverse speeds.
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Use this *Safe, Odorless, Non-Poisonous Spreader* in place of fish oil soaps and summer oils.

FOR BETTER CONTROL OF

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And Most Sucking Insects on Evergreens and Ornamentals

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A must piece of equipment for every nurseryman, florist or farmer, or in fact, anyone growing plants in soil.

Excellent as a gift.

Three sizes; each in a sturdy attractive container.

Priced at \$22.50—\$9.75—\$4.75.

SOMERSET ROSE NURSERY, INC.
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SOUTHWESTERN NEWS.

George Chandler, Chandler Landscape & Floral Co., Kansas City, Mo., is recovering from a broken leg suffered in a fall.

Homer Jameson, landscape gardener, Topeka, Kan., is scheduled to talk on "Landscaping the Yard," December 12, at the last of a series of seven meetings in the housing forum being held at the Topeka high school.

Walter P. and William E. Gantzert, nephews of the late Otto Matzinger, purchased the Highland Park Nursery, Sterling, Ill., from Mr. Matzinger September 23 and are continuing it under the same name. They had been employed by Mr. Matzinger for ten years.

Paul A. Hastings is starting in the nursery and landscape business at Russell, Kan.

With perennials as a specialty, Fabian's Flower Farm is starting in business at Shawnee, Kan., on a tract of seven and one-half acres.

Twenty-two members of the Kansas City Association of Nurserymen attended the regular monthly meeting at the Wagon Wheels restaurant, Overland Park, Kan., November 12. The next meeting will be held at the same place, December 10.

Charles B. Yowell, an employee of the Sutton Nursery Co., Independence, Kan., was injured fatally when struck by an automobile at Arkansas City, Kan., November 12. His home was at Monte Vista, Colo.

Tom Blackburn, nurseryman, of Topeka, Kan., who also runs a tavern, reported that he was recently swindled out of \$1,450. The deal, which involved the purchase of a carload of beer, took place in the outer office of a brewery at St. Joseph, Mo. The swindlers used forged sales slips.

VAPOTONE POTENT SPRAY.

A new synthetic, organic insecticide which has shown spectacular results not only in the control of aphis, but also in the control of red spider, has as its active ingredient hexaethyl tetraphosphate; its trade name is Vapotone. According to research chemists of the California Spray-Chemical Corp., who developed Vapotone, it is one of the most potent sprays that they have worked with.

Tests show that a dilution of only one part to 800 parts of water or one pint in 100 gallons of water will do the job. At this dilution Vapotone has given amazing results in the control of red spiders, aphis, worms and caterpillars, and immature forms of

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Tree Wound Dressing

Arborist Tree Wound Dressing is a scientifically prepared waterproof composition for application to tree cavities, wounds or other exposed wood of trees. It contains no coal tar, carbolineum, creosote, nor any material injurious to the cambium layer or the life of the tree.

Arborist Tree Wound Dressing possesses antiseptic and fungicidal properties, being waterproof, adhesive and elastic, giving a durable tree wound dressing which will not harm the living tissue.

Per gal
1 gal. can (6 in case)..... \$1.00
30 and 50-gal. drums..... .75

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LINDIG'S SOIL SHREDDER

New improved model

Engineered for
the perfection
of soils.

Prompt
delivery.

Write for folder
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Special equipment built to your specifications.

TWIST-EMS—Plant Ties

For tying plants, shrubs, vegetables and flowers.	5000	10000	25,000
No. G-174—8-in.	\$7.95	\$15.20	\$36.50
No. G-175—12-in.	11.90	22.80	54.75
No. G-176—16-in.	15.85	30.50	73.00

PRUNING SHEARS—Professional

These shears are made of the very finest grade steel and workmanship. Seldom need sharpening and made to give a clean smooth cut, so important to the professional.

No. T-123—(Medium size 7-in.)..... Each \$3.25
No. T-124—(Heavy duty 8 1/2-in.)..... Each 3.95

PRUNING SHEARS

Draw-cut Model.

1 sharp blade cuts against a brass anvil giving a clean, smooth cut.
No. T-908—Wash—each



\$2.60

NIPPERS—Short Blade Snips

One of the handiest and most useful tools ever offered for workroom, greenhouse, nursery, gardener, landscaper and at home.

No. T-122—(7 ins. over-all) Each \$1.50

LOPPING SHEARS—Professional

Made of finest steel and blades with a special hook which gives a shearing, clean smooth cut. The long, strong handles give greater reach and leverage.

No. T-125. (Heavy duty)..... Each \$5.50

Schupp Florist Supply Co.
1143 Greenleaf Ave. - WILMETTE, ILL.
PHONE, WILMETTE 4040
MENTION THE AMERICAN NURSERYMAN

many scale insects. It can be used on fruit and ornamental trees, nursery and greenhouse plants, most vegetables and flowers, as well as grapes, hops and other field crops. The spray leaves no unsightly residue.

The new insecticide is available as a dispersible liquid, containing fifty per cent of the active ingredient, under the name of Vapotone insect spray. It is also compounded into a dust mixture in which three per cent of the active ingredient is dispersed on an inert carrier. Out of the hundreds of plants on which Vapotone has been used, tomatoes and cyclamen are the only ones which showed any injury.

Since Vapotone can be used so extensively against red spiders, it has opened the way for the use of other organic insecticides like DDT in places where mite build-up has heretofore been a great problem.

No spreader is needed with the material, as it carries its own wetting and spreading agents. It can be combined with DDT for combination control of codling moth and mites.

AFTER buying all his plants in the past, Clarence H. Albers, landscape architect, North Ridgeville, O., will start his own nursery next spring.

Schupp Specials

**NURSERY STAKES
GALVANIZED STEEL**

No. 6 Gauge—208-inch.	Per	Per
Fine grade hard steel.		
Heavily galvanized.		
Length 100	100	1000
No. N-92—2 ft.	\$3.50	\$29.50
No. N-94—4 ft.	4.70	39.00
No. N-95—5 ft.	5.85	48.50
No. N-96—6 ft.	6.95	58.00
Shipped fresh and new from our mill in Indiana. Delivery in 2 to 3 weeks.		

LIQUID TREE PAINT

Thin only with Raw Linseed Oil

No. T-693—	1-gal. cans Each \$ 1.75
No. T-694—	5-gal. drums Each 6.50
No. T-695—	30-gal. drums Each 32.50

Schupp

DOWAX

Insurance against transplant casualty. DOWAX, designed to reduce mortality, promote growth and to extend the planting season.

Used by Nurseries, large and small, throughout the country with complete success.

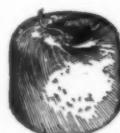
No. N-23—1-gal. cans (7 lbs.), each.....	\$ 2.45
No. N-24—5-gal. drums (35 lbs.), each.....	9.90
No. N-36—30-gal. drums (200 lbs.), each.....	39.90

Directions for use printed on each label.

SAXOLIN TREE WRAP

Rolls, 4 ins. wide, contain approx. 155 linear feet.

No. N-119. Log of 10 Rolls.....	\$5.00
IN stock for immediate shipment.	

**SISAL TWINE for WRAPPING
2-Ply—New Low Price**

2-Ply, Fine Quality	
No. M-3—10-lb. Balls (29c lb.), each ..	\$ 2.90
Bale of 15 Balls.....	42.00
No. M-6—50-lb. reels (29c lb.), each ..	11.50
6 Reels for	84.00
No. M-6x—60-lb. Coils (23 1/2c lb.), each 16.30	

IN stock for immediate shipment.

NOW! PEAT MOSS direct from mine to dealer.

Canadian Sphagnum Peat Moss packed in large wood veneer bales (19x19x40 ins.). Horticultural or Litter Grades.

Orders now accepted for 1947 delivery.

For prices and further details on this excellent opportunity

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306 Whittemore St. Pontiac 20, Mich.

EXCEL PEAT LTD.
Riviere-Du-Loup, P.Q., Canada

Here's our problem... What do you recommend?

Before the war disrupted supplies of Nursery Twines, such inquiries were meat and drink to us. Too often during the war years it has not been possible to make either an intelligent recommendation or any kind of delivery. Now that supplies are again becoming available, it will be a pleasure to recommend and supply the Twines required for the needs of the greatly expanded postwar Nursery Industry.

**GEO. B. CARPENTER & CO.**

600 W. Wacker St., CHICAGO 14, ILL.

ALL TYPES OF STAPLES

For All Kinds of Machines

5000—For Nera Cleo 8-100 Plier.....	\$1.25
5000—For Ace Clipper Plier.....	1.25
5000—For Standard Machines.....	.75
Additional Discounts on Quantities.	

All Products Guaranteed

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**BAMBOO CANES
RAFFIA—BULBS**

MCHUTCHISON & CO.
92 Chambers St. New York 7, N.Y.

SISAL TWINE—IT'S BACK IN CIRCULATION!

1-Ply MEDIUM Sisal (Mexican Henequen) Twine

Approximately 300 feet to the pound and 180-pound breaking strength.

IMMEDIATE SHIPMENT

Limited Quantities available in.

5-pound Balls—100-pound Bales—50-pound Single End Reels

Write for samples and prices.

Also available now, EZ CREPED WATERPROOF NURSERY WRAP and 30/30/30 PLAIN or CREPED WATERPROOF PAPER

EAGLE WRAPPING PRODUCTS CO.

Packing and Shipping Supplies for the Nurseryman

312-330 North Carpenter Street

Chicago 7, Ill.

PLANT PATENTS.

The following plant patents were recently issued, according to Rummel, Rummel & Davis, Chicago patent lawyers:

No. 710. Apple tree. Albert F. Etter, Ettersburg, Cal., assignor to George C. Roeding, Jr., et alles, Cal. A new variety of apple tree, characterized by the size and shape of its fruit, which is comparable with the Baldwin, with flesh almost white and unusually tender, juicy and crisp.

No. 711. Chrysanthemum plant. Emil Prushek, Herrien Springs, Mich., assignor to the R. M. Kellogg Co., Three Rivers, Mich. A new and distinct variety of chrysanthemum plant, characterized as to novelty by the intense coloring of blooms and the very dwarf, compact, rather flat form of the plant.

No. 712. Rose plant. Herbert C. Swim, Ontario, Cal., assignor to the Armstrong Nurseries, Ontario, Cal. A new and distinct variety of rose plant of the polyantha class, characterized as to novelty by its loose and graceful habit of growth and its development of large trusses of bloom; glow foliage, through which the bloom protrudes and thereby forms an attractive background for the flowers; the resistance to mildew of such foliage; the form, size, fragrance and color of the blooms; the large number of flowers per cluster and freedom of blooming; the freedom of the blooms from unsightly fading and their habit of dropping off cleanly, and the suitability of the plant generally for cut flower and hedge purposes.

No. 713. Rose plant. Herbert C. Swim, Ontario, Cal., assignor to Armstrong Nurseries, Inc., Ontario, Cal. A new and distinct variety of rose plant, characterized as to novelty by the color of its flowers; the slender form of its buds; the number of petals and petaloids; the lasting quality of the flowers; their mild fragrance; the resistance of its foliage to orange-rose rust, and its habit of producing more than one bloom per stem in the early part of its blooming season and a single bloom to a stem during the late blooming period.

No. 714. Chrysanthemum plant. E. Prushek, Herrien Springs, Mich., assignor to C. J. Dunn, Benton Harbor, Mich. A new and distinct variety of chrysanthemum plant, characterized by its abundance on soft, deep, mallow-colored blooms of pompon form; the uniformity and permanence of its color; its double, compact petaloids; its long, sturdy flower and leaf stalks; its compact cushion type of bush form; its vigorous and healthy plant growth; its progressive succession of bush-covering blooms, and its resistance to disease and weather conditions.

BURLAP will again be imported into this country, though at higher prices, now that the price ceiling has been removed.

H. GUY COULTER, landscape contractor formerly associated with Catawba Nursery, Newton, N. C., which is owned by his father, R. R. Coulter, is planning to start his own nursery at Arden, N. C.



Already famous for use on Azaleas and Camellias—Fast becoming the leading plant-food for use on Magnolias, Hollies, Gardenias, Rhododendrons, Kalmia, Tea Olives, Blueberries, Tuberous Begonias, Fuchsias, etc.

Cultural Booklet—Azaleas and Camellias—will be sent upon request.

The RELIANCE FERTILIZER CO.
SAVANNAH, GEORGIA

Mention The American Nurseryman when you write.



TREE GUARDS
PROTECT valuable
young TREES
from Bark-Eaters

- This chemically impregnated fibre guard snaps on quickly.
- Length — 24"
- Expands to 3 1/2" Diameter.
- Jobbers-Dealers — write for Special Sales Proposal.

LAMINATE PRODUCTS - Canton 5, Ohio

HAS HIS OWN NURSERY



"I have come a long way since taking your course in good-sized nursery business; employ 12 to 24 men; operate 3 trucks."

—F. Sena, Jr., N. J.

Many a man has moved to higher places, has become a more valuable employee—with this practical, 8 to 12 months' home study course. Nursery owners whose men know landscaping increase their services to the public—and their profits.

45 printed and beautifully illustrated lessons—landscape gardening, designing landscaping of homes, estates, parks, cemeteries, etc. Continuous free consultative service. 30th year. Write for booklet.

Francis A. Robinson, president, is a partner of Robinson & Parnham, member of American Association of Nurserymen; in active professional landscape practice for many years.



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AMERICA'S FINEST

* GET OUR CATALOG AND PRICE SHEET
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A. M. LEONARD & SON
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Tools — Grafting Supplies
Write for Bulletin.

AMERICAN LANDSCAPE SCHOOL
6377 Grand Avenue, Des Moines 12, Ia.

Please send me details.

NAME.....

ADDRESS.....



- **QUICK—EASY FOR NEW SERVE-YOUR-SELF PLANS**
- **HANDSOME DISPLAYS — ALL PLANTS OF EACH VARIETY IN SAME SIZE POTS**

(STANDARD HEAVY)

	No. 0	No. 1	No. 2	No. 3
Height	5½ ins.	6½ ins.	9½ ins.	9 ins.
Diam. Top	5 ins.	6 ins.	7 ins.	8 ins.
Bottom Diam.	4½ ins.	5½ ins.	6½ ins.	7½ ins.
Corresponding Clay Pot	6-in.	7-in.	8-in.	9-in.
Approx. Weight Per 100	35 lbs.	52 lbs.	78 lbs.	88 lbs.
Per 100	\$ 2.75	\$ 4.00	\$ 4.50	\$ 5.00
Per 1000	\$25.00	\$37.50	\$42.50	\$47.50

No. 0 for perennials and for greenhouse use;
No. 1 for perennials and mums;
No. 2 for roses and shrubs;
No. 3 for large shrubs and transplanting.

F.O.B. KANSAS CITY. TERMS: CASH WITH ORDER. EXCEPT ESTABLISHED ACCOUNTS. Prices Subject to Change Without Notice. Please send 1/4 of amount on C.O.D. orders. Unless otherwise instructed, we will determine method of shipment. If you designate express, we advise you to check the cost with your local Express Agent.

Cloverset Pots take 3rd class freight rate. All Cloverset Pots are packed 100 in carton, ready for use. We do not break cartons.

Orders for 300 pots or more take 1,000-pot price. Orders for less than 300 pots take 100-pot price.

CONTROL OF APPLE RED BUG.

The use of oil sprays to destroy the overwintering eggs, or nicotine sprays or dusts to destroy the young insects before they begin feeding on the fruit, are the chief means of controlling apple red bugs, according to a report on investigations by entomologists at the New York state experiment station at Geneva. Their most recent work suggests that DDT may also be used to control this pest.

The experiments conducted by the station scientists cover a period of fourteen years in the Hudson valley and seven years in western New York and are summarized in a bulletin just published by the experiment station and now available upon request.

Injury to both fruit and foliage is caused by the feeding of the immature nymphs and the adult red bug. Foliage injury is not a serious problem, but the fruit may be so badly scarred, russeted or deformed as to render it unsalable.

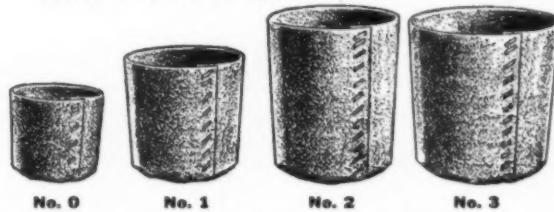
The red bug passes the winter in the egg stage in the bark and wood of twigs and waterspouts. The insect begins hatching out as the trees are blooming and grows through five immature stages before reaching maturity. Egg laying occurs during

CLOVERSET POTS

Pat. No. 2073695

Will Boost Profits!

Nurserymen find that Plants in Cloverset Pots sell easily for much higher prices (although these low-price pots can be given away with plant). Your customers, too, will appreciate all the advantages of buying your plants in these modern, practical pots . . . from which the plants can be so easily removed without root damage.



No loss from breakage, with weight only 1/16 that of same capacity clay pot. Nonporous to cut watering in half. Your customer will find that a started and potted plant is seldom lost in a Cloverset pot with double soil capacity.

Write Us About Carload Discounts and Freight Savings.

CLOVERSET FLOWER FARM

ERNEST HAYSLER & SON

105th Street and Broadway, Kansas City 5, Mo.

Learn Landscape Gardening

A thorough home-study course specializing in the design and layout of grounds plus plant and feature selection and location. Includes instruction in planning, propagating, sowing and grading operations, design of sprinkler systems, pruning, budding and grafting, transplanting operations, soil preparation, design of walks and drives, retaining walls, pools, design for border plantings, color harmony, etc.

Project Included

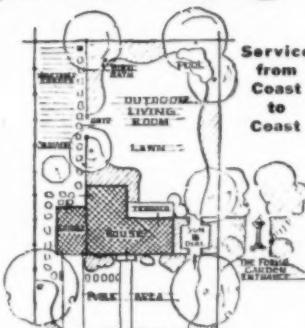
A design project covering problems on property of your choosing is incorporated in your course. This project is developed under the guidance of our Landscape Architects who follow it through to completion thus insuring coverage of your regional conditions.

Employee Training

Nurserymen from Maine to California are using this training to upgrade employees. It may be of help to your organization.

Approved for Veterans

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HYPONEX PLANT FOOD

CLEAN—ODORLESS—SOLUBLE—POWDER

USE HYPONEX to grow bigger and better flowers and vegetables in poorest soil—even in sand, cinders and waste. Excellent fertilizer for trees, shrubs, lawns and houseplants.

USE HYPONEX for top dressing, seedlings, cuttings and transplants. Produce strong root systems and stems, also more and larger flowers and fruit.

SELL HYPONEX to your customers. Nationally advertised.

1 oz. packet...10c—packed 72 to case—wt. 7 lbs.
3 oz. can...25c—packed 36 to case—wt. 12 lbs.
7 oz. can...50c—packed 24 to case—wt. 14 lbs.
1 lb. can...\$1.00—packed 12 to case—wt. 16 lbs.
10 lb. drum \$8—25 lbs. \$15—50 lbs. \$25—100 lbs. \$40
Commercial growers and dealers receive 33-1/3% discount from the above retail prices.

BUY HYPONEX from your Jobber or send \$1 for 1 lb. (makes 100 gallons). \$1 credited on first order for 1 drum or case.

HYDROPONIC CHEMICAL COMPANY, Inc.
315 West 39th Street, New York 18, N. Y.

KER-O-KIL

WEED BURNER

2000° F. Flame

For burning green weeds, brush, sprouts, also for light blacksmithing, thawing, disinfecting.
Write for Free Circular No. 13.

KER-O-KIL MFG. CO.
Gettysburg, Pa., or
Redwood City, Calif.



June and July, the adults dying by the last of July.

Petroleum oil sprays applied during the dormant or delayed dormant stages were found effective in destroying the eggs. The dormant spray should contain four per cent of a paraffinic base oil and the delayed dormant three per cent of a highly paraffinic product. Blood albumin at the rate of two ounces in 100 gallons of water is advised as an emulsifier for the dormant sprays and Bordeaux mixture 2-4-100 for the delayed dormant.

Nicotine sulphate used at the rate of one pint in 100 gallons applied in the calyx spray is the standard recommendation for the control of red bugs in the immature stages of growth. A two per cent nicotine-lime dust, as well as dusts containing one and one-half to two per cent pyrethrins, gave excellent control when applied within five days after the calyx stage. Small-scale trials suggest that DDT may be fully as effective as nicotine or pyrethrum, and if future results bear out this indication, DDT may become the preferred insecticide for killing the hatched stages.

KEEP EAR TO THE GROUND.

Nurserymen might borrow a moral from their florist friends. From one of the florists' papers comes the following observation: "Retail florists report that they are now receiving more complaints from their regular customers about the high prices quoted for flowers at retail than they can recall ever having received before. One retailer recently remarked that it was depressing to have regular customers declare, in no uncertain terms, that they thought they were being overcharged."

There are doubtless plenty of figures to justify the prices which now quite generally prevail throughout the nursery industry. However, it becomes the responsibility of all nurserymen to keep prices within limits which do not drive customers away. Higher prices may be earned by growers who produce and sell materials of extra-high quality and give with such materials satisfactory services.

There comes a point, however, not only with nursery stock but with other commodities, when the customer no longer feels he is getting his money's worth. What this point is and when it is reached are matters for the individual nurseryman to determine. It is, therefore, of importance to those in positions of management that they watch the reaction of



BIG HAND TRUCK
\$112.50 F.O.B., K.C., Kan.

BIG NURSERY HAND TRUCK

40-inch Ball — 1500 lbs.

New equipment to save time and labor. Handle heavy jobs easier, faster, with fewer men. Get into places otherwise inaccessible to heavy equipment without tearing up lawns. Production limited at present. Accepting orders for shipment as quickly as material is available. Early orders will assure this amazing new BIG Hand Truck sooner.

SPECIFICATIONS

- Specially designed curved nose.
- Electrically welded—strong, sturdy.
- Equipped with three 4-ply 16-inch tires.
- Over-all width, 45½ inches.
- Over-all height, 7 feet 9 inches.
- Weight, 175 lbs., including 19-ft. chain.
- Attractive, professional appearance.

THE GARDEN SHOP, INC.
4819 Mission Rd. Kansas City 3, Kan.

RA-PID-GRO
See results in 24 hours
HUSKIER PLANTS ... that yield
BIGGER AND BETTER FLOWERS...
FRUITS ... VEGETABLES ...

PLANTS NEED FEEDING ALL SUMMER!

*makes
fibrous roots,
healthy stock.*

SELL IT TO YOUR CUSTOMERS — Saves thousands of dollars in replacements. Brings repeat business in both stock and Ra-pid-gro from satisfied customers. A real good-will ambassador.

FEED IT TO YOUR STOCK — Feed your stock while it is growing. Produces stock that will live when transplanted. Ra-pid-gro is economical, only twenty pounds to the acre.

IMMEDIATE RESULTS... DOUBLES GROWTH ON BUDS
Write for discounts to the trade.

RA-PID-GRO Corporation - - Dansville, N. Y.

Those YELLOWING LEAVES may turn GREEN IF YOU SPRAY THEM WITH

Send for Information
and Free Sample



Suggested
For General Anemic
Condition of Plants

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ZIP-STAY LABELS
MARKHAM'S OHIO NURSERY
ELYRIA, OHIO

Advertising, plant name, color-banded and plain labels. Write for price list.

MARKHAM'S OHIO NURSERY, Elyria, Ohio

their customers closely, making sure that patrons are not being driven away by unreasonable prices. L. L.

MICHIGAN PEAT

Nature's Finest Soil Builder

Used by leading growers for 30 years. Rich in nitrogen and plant food. Economical. COSTS LESS TO USE! Packed in 100-lb. bags, averaging 4 bu. Prices F.O.B. Capac, Mich. Each

1 tn	19 bags.	\$1.65
20 to 99 bags.	1.50
100 to 400 bags.	1.40

Bulk cars, \$14.00 per ton. Free sample.

American Soil Sponge Selling Corp.
267 Fifth Ave. New York 16, N. Y.
Plant Capac, Mich. Capac 62.

BOOKS FOR NURSERYMEN

Order Now for Christmas

Developing Nursery Sales and Display Grounds; by Harold E. Hunziker. Complete series of articles and plans reprinted from issues of the American Nurseryman. 32 p. (1946).....\$1.00

Beginning in the Nursery Business, by John J. Pinney. Operating methods and requirements described for inexperienced. 48 p. (1946).....50c

Growing Tree and Small Fruits, by H. B. Knapp and E. C. Auchter. Covers marketing as well as orchard operations. 600 p. (1941) \$2.75

Manual of Cultivated Trees and Shrubs, by Alfred Rehder. Invaluable handbook, completely revised and enlarged. 1000 p. (1940).....\$10.50

Propagation of Plants, by M. G. Kains and L. M. McQuesten. Reference book for propagators in greenhouse and nursery. 639 p. (1942) \$3.50

Plant Growth, by L. Edwin Yocom. Explains the structure and germination of seeds, the various parts of the plant, methods of growth, factors that promote or hinder growth and the soil conditions and elements favorable to the process. 25 sketches and illustrations. 200 p. (1945).....\$3.00

Lilacs for America, by John C. Wister. Recommends 100 varieties for general planting. Gives complete color classification of over 500 kinds of lilacs. 64 p. (1943).....\$1.00

Crab Apples for America, by Donald Wyman. Discusses breeding, propagation, diseases and insect pests. Suggests best varieties for flowers, fruits and economic purposes. 81 p. (1943).....\$1.00

The Friendly Evergreens, by L. L. Kumlien. Covers the whole subject of evergreens. Seed collecting, propagation, nursery transplanting and root pruning, digging and transplanting balled evergreens and other cultural details, as well as insect pests and diseases, are discussed fully. 500 illustrations, 82 of which are in color. 240 p. (1946).....\$6.00

Trees and Shrubs for Landscape Effects, by Marian Cruger Coffin. Chiefly concerned with the materials for landscape planting, with many fine pictures. Written by a landscape architect. 168 p. (1940).....\$3.00

Landscaping the Home Grounds, by L. W. Ramsey. Elementary design and planting. Pen sketches, charts and text show the reader how to beautify his home. 169 p., 76 half-tones and 99 sketches. (1930).....\$2.00

Nursery Sales and Management, by Nelson Coon. Buying, estimating, records, salesmanship, office routine, etc. 240 p. (1931).....\$1.50

Maintenance of Shade and Ornamental Trees and Shrubs, by P. P. Pirone. Up-to-date, original and comprehensive—on pruning, surgery, pest control and other care. 420 p. (1941) \$5.00

Insect Enemies of Shade Trees, by Glenn W. Herrick. 350 photographs and drawings of insects and their work. 400 p. (1935).....\$4.50

Tree Experts' Manual, by Richard R. Fenska. Reference book on diagnosis of tree troubles, fertilizing, transplanting, pruning, surgery, diseases, insects, spray materials, etc.—handy information for daily operations of commercial tree expert. 192 p., 65 illus. (1943).....\$4.50

Compiling a New Nursery List, by L. C. Chadwick. Selections of superior varieties of trees, shrubs, vines and ground covers. Lists uses, culture, growth habits and characteristics for landscape purposes. Narrow-leaved evergreens, 64 p. (1941). Broad-leaved evergreens, 84 p. (1941). Each, 50c. Both for.....80c

The Book of Trees, by A. C. Hottes. Helpful lists for various purposes. Treats transplanting, pruning and propagation. Describes important species. 448 p., 2nd revised edition. (1942) \$3.50

The Book of Shrubs, by Alfred C. Hottes. Propagation, transplanting, pruning, soil requirements, etc. 370 pages, third edition. (1937) \$3.00

Nursery Manual, by L. H. Bailey. Describes methods of propagation and lists plants with practice for each. 470 p., revised ed. (1920) \$3.50

Camellias, by G. G. Gerbing. By 108 color plates aids identification of varieties. Text on blooming and culture. 280 p. (1943).....\$15.00

Garden Design, by Marjorie Sewell Cautley. Discusses principles of design as applied to composition, color and decorative elements. Classification of foliage plants by color and texture. 312 p. (1935).....\$5.00

Pronouncing Dictionary of Plant Names. Contains 3,000 plant names and botanical terms, with pronunciation and definitions.....25c

Garden Planning and Building, by Stuart Orthloff and Henry B. Raymore. Contains detailed directions for the homeowner. Contents: Basic landscape design; grading and lawn making; the circulatory system; designing the flower garden; walls, steps and fences; garden houses; water features; woodland and wild gardens; rock gardening; furnishing and lighting the garden; playground and game areas; soil fertility. 282 p.\$2.75

Seeding and Planting in the Practice of Forestry, by James W. Toumey. Third edition revised and enlarged by Clarence F. Korstian. Useful for nurserymen also. 507 p. (1942).....\$5.00

Handbook of Fertilizers, by A. F. Gustafson. Source, composition, effects and application of commercial fertilizers. 172 p. (1944).....\$1.75

Spray Chemicals and Application Equipment, by J. A. McClintock and Wayne B. Fisher. Describes methods of using spray chemicals. Discusses insects and diseases controlled by the specific chemicals and relates methods of improving present pest control practices. Sprayers and dusters now available are described and about 300 illustrations of this equipment are shown. 300 p. (1945).....\$4.00

BOOKS for Nurserymen

Book A. Illustrates in full color 235 standard nursery items, brief description, substantially bound. Price in small lots, 75c each.

Descriptive Nursery Catalog

Nicely illustrated, 48 pages and cover. 18c each in small lots.

Correct Planting Methods

A pocket-size 48-page booklet. Very complete but concise information, well illustrated. Helpful in preventing claims for dead stock that cost nurserymen money. Sample, 10c. Write for discounts on quantities.

Will send sample copy of each of the above on receipt of \$1.00. Cash with order.

Made to Order

Catalogs, Folders, etc., with illustrations in full color or one color. Thousands of engravings available. Send your specifications or samples for estimate and suggestions.

A. B. MORSE COMPANY
ST. JOSEPH, MICHIGAN

IT COSTS NO MORE
(and in most instances less)
FOR OUR PACKING OF
Nursery Burlap
Squares and Rolls

Write for prices and samples.

L. ATKIN'S SONS
P. O. Box 167 Rochester, N.Y.

**LABELS
FOR
NURSERYMEN**
**THE
BENJAMIN CHASE
COMPANY**
DERRY, N. H.

"COTTONETTE" Nursery Squares
"NAMSCO" Burlap Squares
"GIBRAL-TAR" Frost Covers
HORTICULTURAL PEAT MOSS
REED MATS
Write for prices; state requirements.

NEW AMSTERDAM IMPORT CO., INC.
122 Chambers St., New York 7, N. Y.

CATALOGS RECEIVED.

Verhalem Nursery Co., Scottsville, Tex.—Wholesale catalog of evergreens, deciduous shrubs, azaleas, ivy and lining-out stock, with special section for stock grown in tin cans and wooden tubs, 24 pages and cover, 4x9 inches.

Scruggs Nursery, McMinnville, Tenn.—Wholesale price list of forest and shade trees, shrubs, vines and evergreens, 7 pages, 3 1/2x9 inches.

Waynesboro Nurseries, Inc., Waynesboro, Va.—Catalog of fruit and nut trees, small fruits, shrubs, narrow-leaved and broad-leaved evergreens, shade trees, roses and bulbs, fully illustrated in color, 45 pages, 8x10 1/4 inches.

Rich & Sons Nursery, Hillsboro, Ore.—Bulb and rose catalog, fully illustrated in color, 32 pages, 8 1/2x11 inches.

Moller's Nursery, Fairview, Ore.—Catalog of fruit and nut trees, small fruits, roses, flowering shrubs, vines, shade and ornamental trees and evergreens, fully illustrated, partly in color, 24 pages, 7 1/2x11 1/4 inches.

Sherwood Nursery Co., Portland, Ore.—Price list of conifers and broad-leaved evergreens, deciduous shrubs and rock plants, 40 pages, 5 1/2x8 inches.

Rich & Sons Nursery, Hillsboro, Ore.—Illustrated wholesale price list of fruit and nut trees, small fruits, shade and ornamental trees, deciduous shrubs, hedge plants, vines, perennials and bulbs, 26 pages and cover, 6x9 inches.

Fruitland Nurseries, Augusta, Ga.—Retail catalog of general nursery stock, with 4-page insert of colored pictures of camellias, which are featured, 46 pages, 7x9 1/4 inches.

Kingsville Nurseries, Kingsville, Md.—Descriptive price list of noteworthy flowering trees and shrubs, including rare and unusual plants, 84 pages and cover, 4x9 inches.

Tuttle Bros. Nurseries, Pasadena, Cal.—8-page booklet of camellias, illustrated in color, 6x9 inches.

MODERN storage facilities have been completed at the Canandaigua farm of J. E. Miller Nurseries, Naples, N. Y. The address of the firm has been changed to Canandaigua, N. Y., effective November 22.

BUILDINGS and land of the Harrison Nursery Co., York, Neb., have been sold by its president, E. H. Smith, to Dean Sack, and the firm will retire from the nursery field. The nursery company, which was founded in 1887 by William and Harry S. Harrison, will retain possession of the office quarters, buildings and fields until after next spring's deliveries have been made.

ARTHUR G. PHILLIPS and his father recently purchased the J. S. Phillips Flower Shop & Greenhouses, Lonaconing, Md., and will operate them as Phillips' Flower Shop. The shop has been completely renovated and modernized, and extensive repairs have been made in the greenhouses. New boilers are to be installed, and additional construction work is planned.

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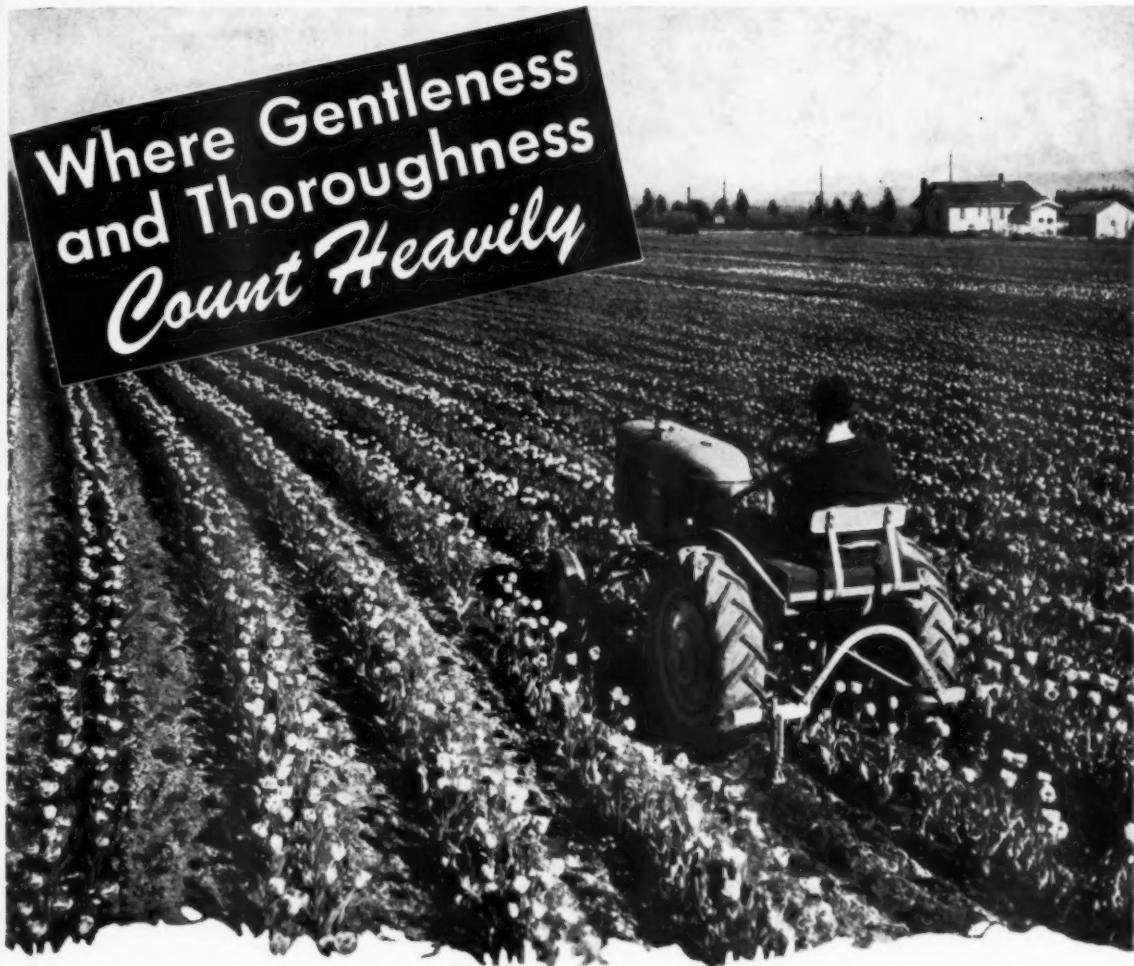
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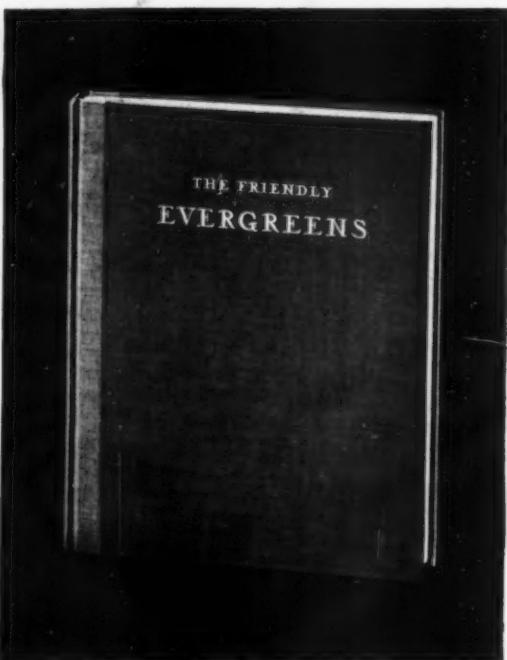
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